Instruction Manual

SERIES 6600
VIDEO RECEIVER

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UNPACKING INSTRUCTIONS FOR MODELS 6601, 6602, AND 6603 RECEIVERS

(1) Install IF jumper and DC power cables (figure 1).
(2) Install the correct crystal (figure 3) for the desired transponder (Model 6601 only).
(3) Ensure that the proper polarization input to receiver is utilized.
(4) Apply power.
(5) If the receiver does not operate properly, remove power.
(6) Remove screws A and B (figure 2).
(7) Remove retaining bar "C" (figure 2).
(8) Remove top cover by sliding forward (figure 2).

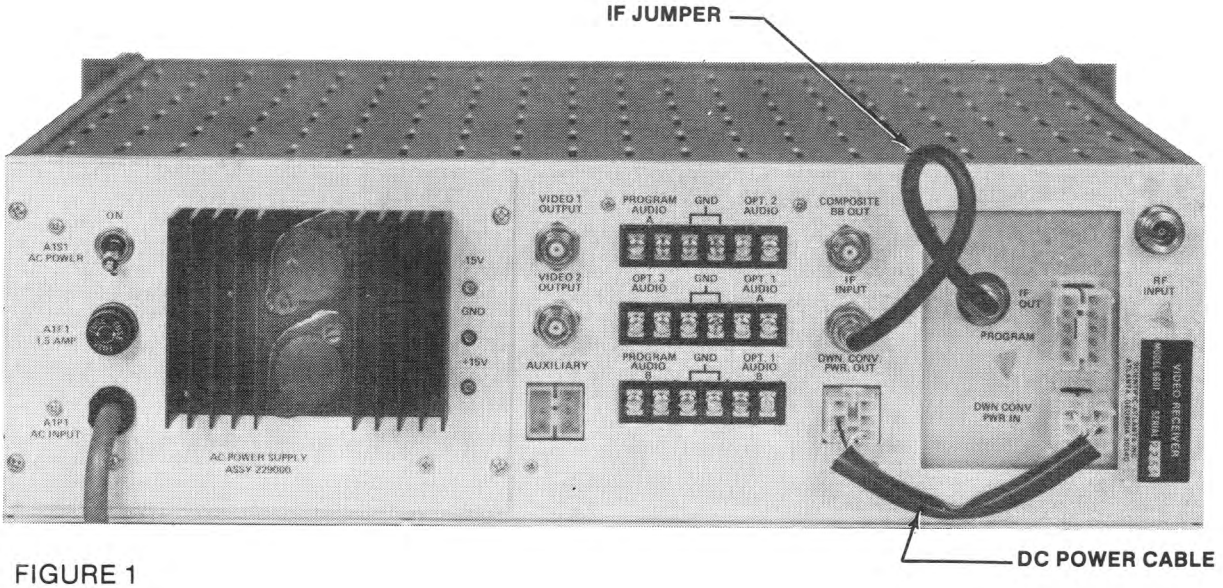

FIGURE 1

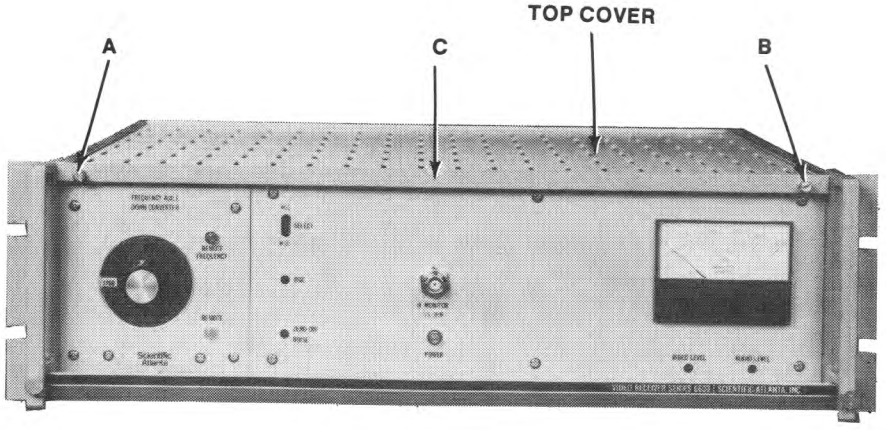

FIGURE 2

(9) Remove each of the plug-in printed-wiring boards (figure 3), one at a time, and re-install the board, making sure each is firmly seated in its connectors (figure 4).

(10) Check power supply plug for good connection to Motherboard (figure 4).

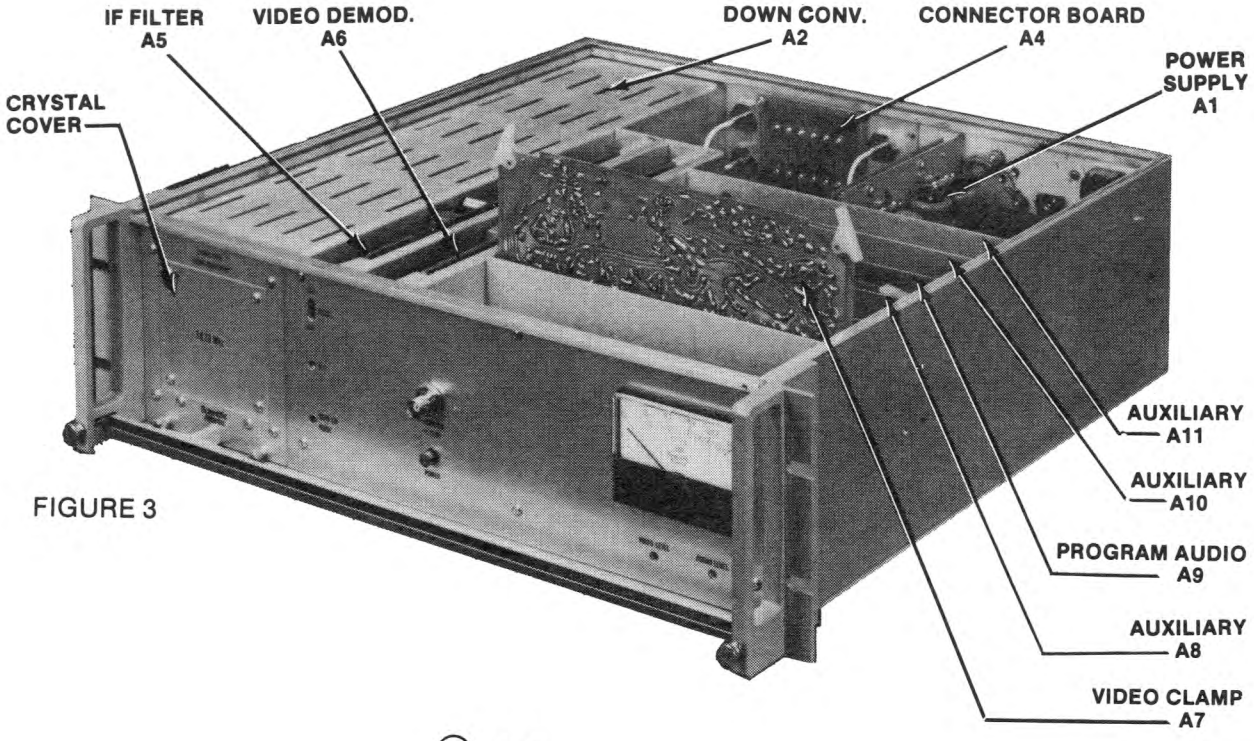

FIGURE 3

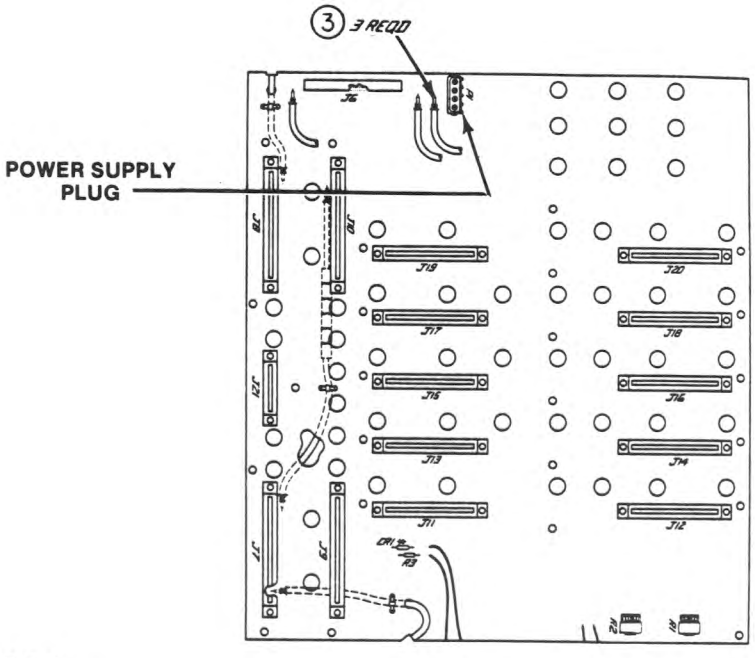

FIGURE 4

(11) Replace top cover, retaining bar "C", and re-apply power.

(12) If the receiver still does not operate properly, please phone: Toll-free, 800-241-1966 outside Georgia; in Georgia, 404-925-5300, for assistance.

TABLE OF CONTENTS

Paragraph		Page
	SECTION 1 GENERAL INFORMATION	
1.1	GENERAL	1-1
1.2	PURPOSE OF EQUIPMENT	1-1
1.3	CONFIGURATIONS	1-1
1.4	GENERAL DESCRIPTION	1-1
	1.4.1 DOWNCONVERTER	1-1
	1.4.2 IF AMPLIFIER	1-7
	1.4.3 VIDEO DEMODULATOR	1-7
	1.4.4 VIDEO CLAMP	1-7
	1.4.5 AUDIO	1-7
	1.4.6 AC POWER SUPPLY	1-7
	1.4.7 AUXILIARY BOARDS	1-7
1.5	SPECIFICATIONS	1-7
1.6	DC CURRENT CONSUMPTION OF SERIES 6600 RECEIVER CONFIGURATIONS	1-11
1.7	MECHANICAL DESCRIPTION	1-12
1.8	WARRANTY	1-12
	SECTION 2 INSTALLATION	
2.1	GENERAL	2-1
2.2	UNPACKING AND INSPECTION	2-1
	2.2.1 DAMAGE OR LOSS DURING SHIPMENT	2-1
	2.2.2 EQUIPMENT RETURN	2-1
2.3	INSTALLATION	2-1
	2.3.1 PHYSICAL REQUIREMENTS	2-1
	2.3.2 RACK MOUNTING	2-2
	2.3.3 INPUT/OUTPUT CONNECTIONS	2-2
	2.3.4 MODEL 6601 DOWNCONVERTER CRYSTAL INSTALLATION	2-6
	2.3.5 MODEL 6602 RECEIVER CONNECTIONS	2-6
	2.3.6 MODEL 6603 RECEIVER CONNECTIONS	2-10
	2.3.7 4.5-MHz SUBCARRIER MODULATOR 229045	2-10

TABLE OF CONTENTS- continued

SECTION 3
OPERATION

3.1	GENERAL	3-1
	3.1.1 CONTROLS AND INDICATORS	3-1
	3.1.2 PREPARATIONS	3-1
3.2	TURN-ON PROCEDURE	3-1
3.3	FREQUENCY SELECTION	3-1
3.4	ZEROING OF CARRIER-TO-NOISE	3-1
3.5	METERING	3-1
3.6	ADDITIONAL CONTROLS UNIQUE TO MODEL 6602	3-5

SECTION 4
THEORY OF OPERATION

4.1	GENERAL	4-1
4.2	BLOCK DIAGRAM DISCUSSION	4-1
	4.2.1 AC POWER SUPPLY A1	4-1
	4.2.2 MODEL 6601 DOWNCONVERTER A2	4-5
	4.2.3 MODEL 6602 DOWNCONVERTER A2	4-13
	4.2.4 MODEL 6603 DOWNCONVERTER A2	4-21
	4.2.5 IF AMPLIFIER	4-27
	4.2.6 VIDEO DEMODULATOR A6	4-27
	4.2.7 VIDEO CLAMP A7	4-35
	4.2.8 AUDIO DEMODULATOR	4-35
	4.2.9 4.5-MHz SUBCARRIER MODULATOR	4-41
	4.2.10 -24V DC POWER SUPPLY	4-41
4.3	MODULE DETAIL DISCUSSION	4-47
	4.3.1 AC POWER SUPPLY A1	4-47
	4.3.2 MODEL 6601 DOWNCONVERTER	4-48
	4.3.3 MODELS 6602 AND 6603 DOWNCONVERTERS	4-49
	4.3.4 INTERCONNECTING BOARD A3	4-50
	4.3.5 CONNECTOR BOARD A4	4-50
	4.3.6 IF AMPLIFIER A5	4-50
	4.3.7 VIDEO DEMODULATOR A6	4-51
	4.3.8 VIDEO CLAMP A7	4-52
	4.3.9 AUDIO DEMODULATOR	4-53

TABLE OF CONTENTS - continued

	4.3.10	4.5-MHz SUBCARRIER MODULATOR	4-54
	4.3.11	AUDIO MODULATION LIMITER OPTION	4-55
	4.3.12	-24V DC POWER SUPPLY	4-55

SECTION 5
MAINTENANCE

5.1		GENERAL	5-1
5.2		SPARES	5-1
5.3		VISUAL INSPECTION	5-2
5.4		CLEANING	5-2
5.5		FAULT ISOLATION	5-2
	5.5.1	PRELIMINARY CHECKS	5-2
	5.5.2	MODULE ISOLATION GUIDE	5-4
5.6		TROUBLESHOOTING	5-7
	5.6.1	AC POWER SUPPLY A1	5-7
	5.6.2	MODEL 6601 DOWNCONVERTER	5-9
	5.6.3	MODELS 6602 AND 6603 DOWNCONVERTERS	5-12
	5.6.4	INTERCONNECTING BOARD A3	5-18
	5.6.5	CONNECTOR BOARD A4	5-18
	5.6.6	IF AMPLIFIER A5	5-18
	5.6.7	VIDEO DEMODULATOR A6	5-25
	5.6.8	VIDEO CLAMP A7	5-27
	5.6.9	AUDIO DEMODULATOR	5-29
	5.6.10	4.5-MHz SUBCARRIER MODULATOR	5-29
	5.6.11	-24V DC POWER SUPPLY	5-30

SECTION 6
PARTS LISTS

6.1		GENERAL	6-1
6.2		EXPLANATION OF COLUMN HEADINGS	6-1
6.3		ORDERING PARTS	6-1

SECTION 7
DIAGRAMS

LIST OF ILLUSTRATIONS

Figure	Title	Page
1-1	Model 6601 Video Receiver	1-2
1-2	Model 6602 Video Receiver	1-2
1-3	Model 6603 Video Receiver	1-3
1-4	Series 6600 Video Receiver Configuration Chart	1-5
1-5	Series 6600 Video Receiver Threshold Performance (2 sheets)	1-8
1-6	Series 6600 Video Receiver and Its Card Cage	1-17
2-1	Series 6600 Rack Slide Mounting Configuration	2-3
2-2	Model 6601 Video Receiver Rear-Panel Input/Output Connectors	2-4
2-3	Model 6601 Video Receiver with Plug-In Crystal	2-7
2-4	Model 6602 Video Receiver Rear View	2-9
2-5	Video Output Without the 4.5-MHz Subcarrier	2-11
2-6	Video Output With the 4.5-MHz Subcarrier	2-11
3-1	Model 6601 Receiver Controls and Indicators	3-2
3-2	Models 6602 and 6603 Receiver Unique Controls and Indicators	3-3
4-1	Series 6600 Video Receiver Block Diagram	4-2
4-2	Series 6600 AC Power Supply Block Diagram	4-3
4-3	Model 6601 Integrated Downconverter Block Diagram	4-7
4-4	Model 6601 Discrete Downconverter Block Diagram	4-9
4-5	Model 6601 First LO Block Diagram	4-11
4-6	Series 6600 Second Converter Block Diagram	4-15
4-7	Model 6602 Agile Downconverter Block Diagram	4-17
4-8	Model 6602 Agile LO Block Diagram	4-19
4-9	Model 6602 Interface Logic Board Block Diagram	4-23
4-10	Model 6603 Downconverter Block Diagram	4-25
4-11	Model 6603 Interface Board Block Diagram	4-29
4-12	Series 6600 IF Amplifier Block Diagram	4-31
4-13	Series 6600 Video Demodulator Block Diagram	4-33
4-14	Series 6600 Video Clamp Block Diagram	4-37
4-15	Series 6600 Audio Demodulator Block Diagram	4-39
4-16	4.5-MHz Subcarrier Modulator Block Diagram	4-43
4-17	Series 6600 -24V dc Power Supply Block Diagram	4-45
4-18	IF Amplifier PIN Diode Attenuator Section, Simplified Schematic Diagram	4-50
5-1	Series 6600 Fuse Location and Rear Connections	5-3
5-2	-24V dc Power Supply, Maintenance Diagram	5-5
5-3	Model 6601 First LO Reference Oscillator Circuit Typical Waveform	5-10
5-4	Model 6601 First LO Divide-by-64 Circuit Typical Waveform	5-11
5-5	Model 6601 First LO Phase Comparator Circuit Typical Waveform	5-11

LIST OF ILLUSTRATIONS - continued

5-6	Reference Oscillator Output, U1 Pin 3	5-13
5-7	Reference Chain ÷ 4 Output, U1 Pin 8	5-14
5-8	Reference Chain ÷ 64 Output, U2 Pin 8	5-14
5-9	÷ 64 Prescaler Output, U8 Pin 4	5-15
5-10	Programmable Divider "Tens Digit" Terminal Count, U6 Pin 15	5-15
5-11	Programmable Divider "Units Digit" Terminal Count, U7 Pin 15	5-16
5-12	Programmable Divider Output, U5 Pin 14	5-16
5-13	Typical Signal at Q1 or Q2 Collector (-24V dc Power Supply)	5-32
5-14	Typical Signal at U1, Pin 3 (-24V dc Power Supply)	5-32
5-15	Typical Signal at Heat Sinks of Transistors Q1 through Q4 (-24V dc Power Supply)	5-33
5-16	Typical Signal at Heat Sinks of Transistors Q1 through Q4 Indicating an Unbalanced Condition	5-33
5-17	-24V dc Power Supply Current Consumption Graph	5-35
7-1	Series 6600 AC Power Supply Module Assembly	7-3
7-2	Series 6600 AC Power Supply, Schematic Diagram	7-4
7-3	Series 6600 AC Power Supply Printed-Wiring Board Assembly	7-5
7-4	Model 6601 Integrated Converter Downconverter Module Assembly	7-6
7-5	Model 6601 First LO Module Assembly	7-7
7-6	Model 6601 First LO Schematic Diagram	7-8
7-7	Model 6601 First LO Printed-Wiring Board Assembly	7-9
7-8	Series 6600 Second Converter Module Assembly	7-11
7-9	Series 6600 Second Converter, Schematic Diagram	7-12
7-10	Series 6600 Second Converter, Printed-Wiring Board Assembly	7-13
7-11	Model 6602 Frequency Agile Downconverter Module Assembly	7-14
7-12	Model 6602 Agile LO Assembly	7-15
7-13	Model 6602 Agile LO, Schematic Diagram	7-16
7-14	Model 6602 Agile LO Printed-Wiring Board Assembly	7-17
7-15	Model 6602 Interface Logic Board Schematic Diagram	7-18
7-16	Model 6602 Interface Logic Board Printed-Wiring Board Assembly	7-19
7-17	Series 6600 Interconnecting Board Schematic Diagram	7-20
7-18	Series 6600 Interconnecting Printed-Wiring Board Assembly	7-21
7-19	Series 6600 Connector Board Schematic Diagram	7-22
7-20	Series 6600 Connector Board Printed-Wiring Board Assembly	7-23
7-21	Series 6600 IF Amplifier Schematic Diagram	7-24
7-22	Series 6600 IF Amplifier Printed-Wiring Board Assembly	7-25

LIST OF ILLUSTRATIONS - continued

7-23	Series 6600 Video Demodulator Schematic Diagram	7-26
7-24	Series 6600 Video Demodulator Printed-Wiring Board Assembly	7-27
7-25	Series 6600 Video Clamp Schematic Diagram	7-28
7-26	Series 6600 Video Clamp Printed-Wiring Board Assembly	7-29
7-27	Series 6600 6.8-MHz Program Audio Schematic Diagram	7-30
7-28	Series 6600 6.8-MHz Program Audio Printed-Wiring Board Assembly	7-31
7-29	Series 6600 4.5-MHz Subcarrier Modulator Schematic Diagram	7-32
7-30	Series 6600 4.5-MHz Subcarrier Modulator Printed-Wiring Board Assembly	7-33
7-31	Series 6600 Audio Modulator Limiter Schematic and Printed-Wiring Board Assembly	7-35
7-32	Series 6600 6.2-MHz Subcarrier Demodulator Schematic Diagram	7-36
7-33	Series 6600 6.2-MHz Subcarrier Demodulator Printed-Wiring Board Assembly	7-37
7-34	Series 6600 7.4-MHz Subcarrier Demodulator Schematic Diagram	7-38
7-35	Series 6600 7.4-MHz Subcarrier Demodulator Printed-Wiring Board Assembly	7-39
7-36	Series 6600 6.2-MHz Program Audio Schematic Diagram	7-40
7-37	Series 6600 6.2-MHz Program Audio Printed-Wiring Board Assembly	7-41
7-38	Series 6600 6.2-MHz Cue Demodulator Schematic Diagram	7-42
7-39	Series 6600 6.2-MHz Cue Demodulator Printed-Wiring Board Assembly	7-43
7-40	Series 6600 -24-Volt DC Power Supply Assembly	7-45
7-41	Series 6600 -24-Volt DC Power Supply Schematic Diagram	7-46
7-42	Series 6600 -24-Volt DC Power Supply Switching Board Assembly	7-47
7-43	Series 6600 -24-Volt DC Power Supply Interconnect Board Assembly	7-49
7-44	Model 6603 Interface Printed-Wiring Board Schematic Diagram	7-50
7-45	Model 6603 Interface Printed-Wiring Board Assembly	7-51

LIST OF TABLES

Table	Title	Page
1-1	Series 6600 Receiver Standard Options	1-4
1-2	Series 6600 Video Receiver, Technical Characteristics	1-10
1-3	Series 6600 DC Current Consumption	1-12
2-1	Series 6600 Rear-Panel Input/Output Connectors	2-5
2-2	Series 6600 Auxiliary Connector Pin Functions	2-6
2-3	Model 6602 Unique Rear Panel Connections	2-8
3-1	Satellite Transponder Frequencies	3-4
3-2	Model 6602 Code Used For Remote-Controlled Transponder Selection	3-6
5-1	Module Isolation Guide	5-6
5-2	AC Power Supply Semiconductor DC Voltages	5-8
5-3	Model 6601 First LO Basic Functions	5-10
5-4	Model 6601 First LO Test Voltage and Current Chart	5-10
5-5	Model 6601 First LO Fault Isolation	5-12
5-6	Agile LO DC Voltage Chart	5-12
5-7	Agile LO Functions and Waveforms	5-13
5-8	Remote Frequency 4140 MHz Logic Level States	5-19
5-9	Remote Frequency 3820 MHz Logic Level States	5-20
5-10	Remote Frequency 3780 MHz Logic Level States	5-21
5-11	IF Amplifier First Voltage Checks	5-22
5-12	IF Amplifier Attenuator Typical Voltages	5-23
5-13	IF Amplifier Transistor (2N5179) DC Voltages	5-24
5-14	IF Amplifier AGC Level Detector Voltages	5-25
5-15	IF Amplifier AGC Loop and C/N Buffer Test	5-25
5-16	IF Amplifier Typical Gains	5-25
5-17	Video Clamp Transistor DC Voltages	5-28
5-18	Video Clamp Integrated Circuit DC Voltages	5-28
5-19	4.5-MHz Subcarrier Modulator Transistor DC Voltages	5-31
5-20	4.5-MHz Subcarrier Modulator Integrated Circuit DC Voltages	5-31
6-1	Series 6600 Parts List Index	6-2
7-1	Drawing Number Numerical Index	7-1

SECTION 1
GENERAL INFORMATION

1.1 GENERAL

The purpose of this instruction manual is to facilitate installation, operation, maintenance, and troubleshooting of the Scientific-Atlanta Series 6600 Video Receiver, including all standard options.

1.2 PURPOSE OF EQUIPMENT

Scientific-Atlanta's Series 6600 Video Receiver (figures 1-1, 1-2, and 1-3) provides the frequency conversion and signal processing necessary to link an antenna receiving a satellite-transmitted video signal to the user's terrestial distribution system.

1.3 CONFIGURATIONS

Three different models of the Series 6600 Video Receiver, together with several options, are available to fill our customers' varying needs. Figure 1-4 provides a configuration chart for the Models 6601, 6602, and 6603 receivers, including reference designations and drawing numbers of major subassemblies discussed in later sections of this manual; location by reference designation is shown in figure 1-6. Model 6601 is equipped with a single-channel downconverter. Model 6602 is equipped with the agile downconverter, providing a total of 24 channels (refer to table 3-1). Model 6603 is equipped with an agile downconverter minus remote electronic timing programmability, Table 1-1 lists and briefly describes the options currently available with all Series 6600 Video Receivers. Contact Scientific-Atlanta for other special options desired. Refer to paragraph 6.3 for ordering information.

1.4 GENERAL DESCRIPTION

The design approach provides modular downconverters and power supplies. The downconverters plug in from the front of the receiver as shown in figures 1-1, 1-2, and 1-3.

The complete receiver is packaged in a single chassis to permit standard racking. A motherboard is utilized to interconnect the vertically mounted plug-in printed-wiring boards. A ground plane and partitions between each board provide isolation.

Paragraphs 1.4.1 through 1.4.6 provide a brief description of the standard modules or boards of the Series 6600 Video Receiver. Paragraph 1.4.7 briefly describes the flexibility of the auxiliary board slots.

1.4.1 DOWNCONVERTER

The input 3.7 - 4.2 GHz signal to downconverter module A2 is first converted to an 880-MHz IF with a bandwidth of approximately 80 MHz. A second converter module in the downconverter heterodynes this 880-MHz IF down to 70 MHz. The bandwidth of the 70-MHz IF as it leaves the downconverter, via an interconnecting cable on the rear, remains approximately 80 MHz.

1.4.1.1 Model 6601 Downconverter. The center frequency of the IF is determined by the crystal frequency. Channel frequencies are 3720 MHz to 4180 MHz in 20 MHz steps - 24 channels total (refer to table 3-1 for the center frequencies of the 24 channels). When ordering crystals from Scientific-Atlanta, specify the satellite channel frequency.

The Model 6601 downconverter consists of a First L.O. (Local Oscillator), Second Converter, and an integrated microwave converter (on current production units).

1.4.1.2 Model 6602 Downconverter. The Model 6602 downconverter permits the operator to dial any of 24 satellite channels (table 3-1) simply by turning a single selector switch on the front panel.

The principal internal differences between the Model 6601 and Model 6602 receiver are that the latter contains an interface logic board and an agile L.O. board which contains the phase lock loop (PLL) and voltage-control oscillator (VCO) circuitry. The Model 6602 second converter and integrated microwave converter are the same as in the Model 6601.

For remote operation features of the Model 6602 receiver, refer to the Operation section (section 3).

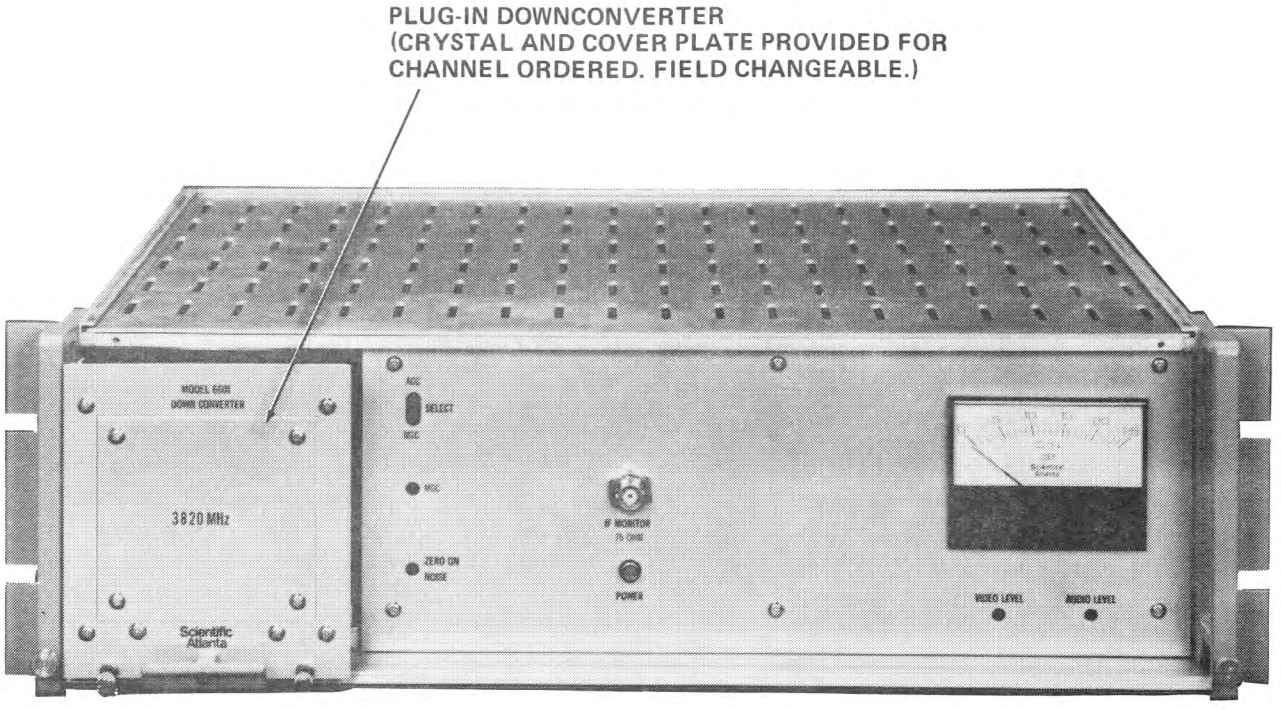

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Figure 1-1. Model 6601 Video Receiver

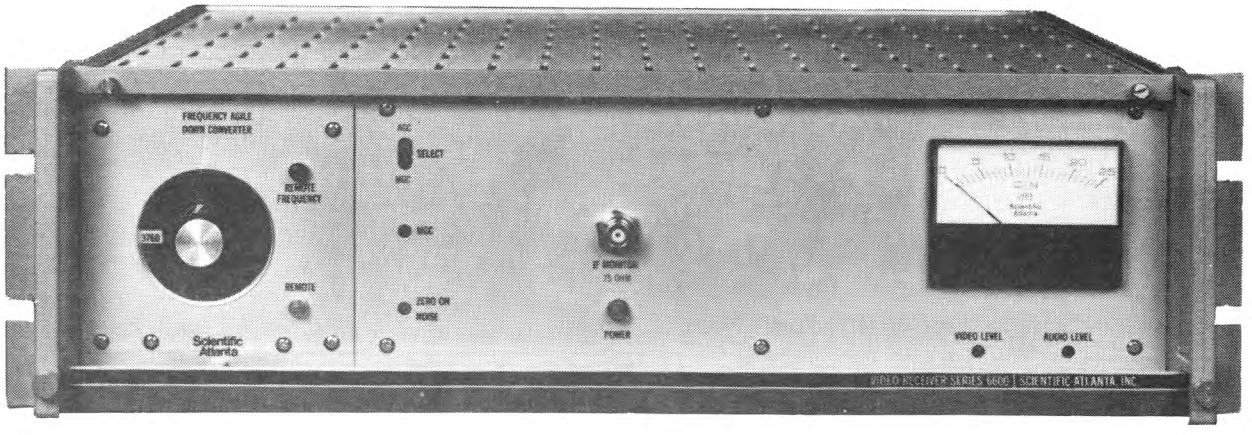

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Figure 1-2. Model 6602 Video Receiver

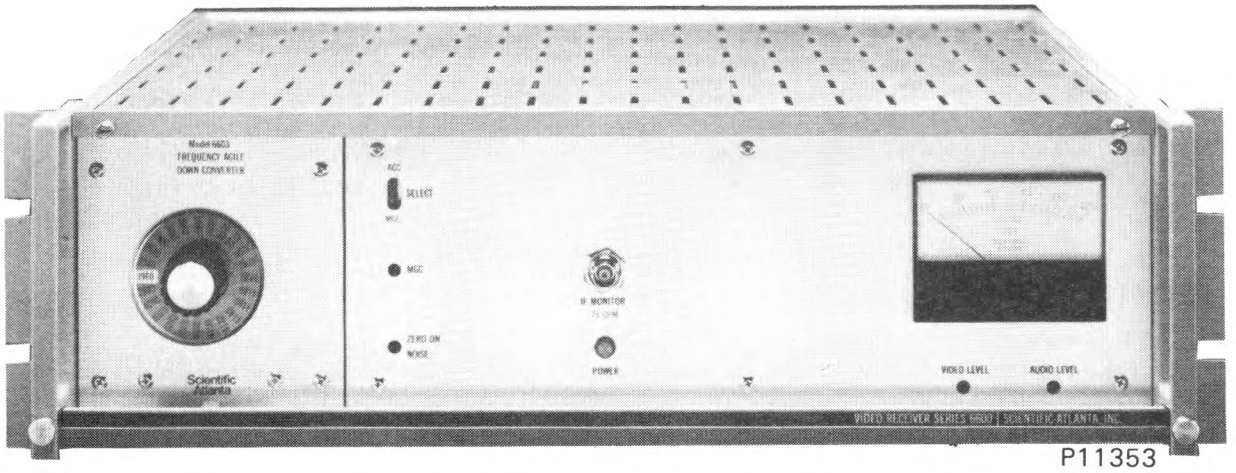

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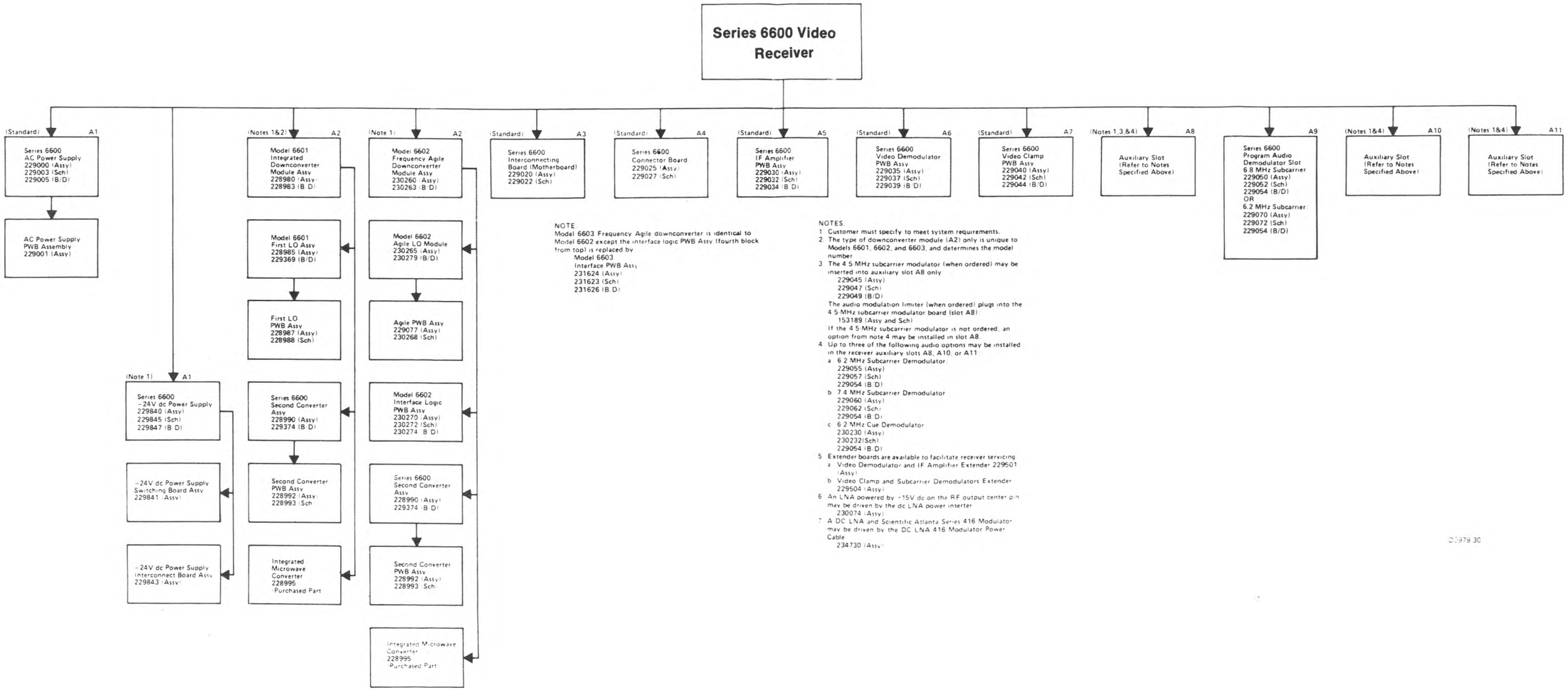
Figure 1-3. Model 6603 Video Receiver

TABLE 1-1. SERIES 6600 RECEIVER STANDARD OPTIONS

Description	Part Number	Bandwidth Pre-Detection	Bandwidth Post Detection	De-Emphasis	Present User
4.5-MHz Subcarrier Modulator	229045	-	-	-	-
Audio Modulation Limiter	153189	-	-	-	-
6.2-MHz Subcarrier Demodulator	229055	250 kHz	21.5 kHz	None	Satellite Radio Network North American Newstime
6.8-MHz Program Audio	229050	450 kHz	21.5 kHz	Std. 75 μs	Program Audio, SATCOM I, others
7.4-MHz Subcarrier Demodulator	229060	350 kHz	21.5 kHz	Std. 75 μs	None
6.2-MHz Program Audio	229070	450 kHz	21.5 kHz	Std. 75 μs	Program Audio, some WESTAR
6.2-MHz Cue Demodulator	230230	250 kHz	21.5 kHz	Std. 75 μs	Cue Demodulation
-24 dc Power Supply Option	229840	-	-	-	-
Auto Polarization Relay	230072	-	-	-	-
DC LNA Inserter	230074	-	-	-	-
DC LNA/416 Modulator Power Cable	234730	-	-	-	-


Series 6600 Video Receiver
(Standard) A1
Series 6600 AC Power Supply 229000 (Assy) 229003 (Sch) 229005 (B/D)
AC Power Supply PWB Assembly 229001 (Assy)
(Note 1) A1
Series 6600 −24V dc Power Supply 229840 (Assy) 229845 (Sch) 229847 (B/D)
−24V dc Power Supply Switching Board Assy 229841 (Assy)
−24V dc Power Supply Interconnect Board Assy 229843 (Assy)
(Notes 1&2) A2
Model 6601 Integrated Downconverter Module Assy 228980 (Assy) 228983 (B/D)
Model 6601 First LO Assy 228985 (Assy) 229369 (B/D)
First LO PWB Assy 228987 (Assy) 228988 (Sch)
Series 6600 Second Converter Assy 228990 (Assy) 229374 (B/D)
Second Converter PWB Assy 228992 (Assy) 228993 (Sch)
Integrated Microwave Converter 228995 (Purchased Part)
(Note 1) A2
Model 6602 Frequency Agile Downconverter Module Assy 230260 (Assy) 230263 (B/D)
Model 6602 Agile LO Module 230265 (Assy) 230279 (B/D)
Agile PWB Assy 229077 (Assy) 230268 (Sch)
Model 6602 Interface Logic PWB Assy 230270 (Assy) 230272 (Sch) 230274 (B/D)
Series 6600 Second Converter Assy 228990 (Assy) 229374 (B/D)
Second Converter PWB Assy 228992 (Assy) 228993 (Sch)
Integrated Microwave Converter 228995 (Purchased Part)
(Standard) A3
Series 6600 Interconnecting Board (Motherboard) 229020 (Assy) 229022 (Sch)
(Standard) A4
Series 6600 Connector Board 229025 (Assy) 229027 (Sch)
(Standard) A5
Series 6600 IF Amplifier PWB Assy 229030 (Assy) 229032 (Sch) 229034 (B/D)
(Standard) A6
Series 6600 Video Demodulator PWB Assy 229035 (Assy) 229037 (Sch) 229039 (B/D)
(Standard) A7
Series 6600 Video Clamp PWB Assy 229040 (Assy) 229042 (Sch) 229044 (B/D)
(Notes 1,3,&4) A8
Auxiliary Slot (Refer to Notes Specified Above)
A9
Series 6600 Program Audio Demodulator Slot 6.8 MHz Subcarrier 229050 (Assy) 229052 (Sch) 229054 (B/D) OR 6.2 MHz Subcarrier 229070 (Assy) 229072 (Sch) 229054 (B/D)
(Notes 1&4) A10
Auxiliary Slot (Refer to Notes Specified Above)
(Notes 1&4) A11
Auxiliary Slot (Refer to Notes Specified Above)

NOTE
Model 6603 Frequency Agile downconverter is identical to Model 6602 except the interface logic PWB Assy (fourth block from top) is replaced by
Model 6603 Interface PWB Assy 231624 (Assy) 231623 (Sch) 231626 (B/D)

NOTES:
1. Customer must specify to meet system requirements.
2. The type of downconverter module (A2) only is unique to Models 6601, 6602, and 6603, and determines the model number.
3. The 4.5 MHz subcarrier modulator (when ordered) may be inserted into auxiliary slot A8 only.
   229045 (Assy)
   229047 (Sch)
   229049 (B/D)
   The audio modulation limiter (when ordered) plugs into the 4.5 MHz subcarrier modulator board (slot A8).
   153189 (Assy and Sch)
   If the 4.5 MHz subcarrier modulator is not ordered, an option from note 4 may be installed in slot A8.
4. Up to three of the following audio options may be installed in the receiver auxiliary slots A8, A10, or A11.
   a. 6.2 MHz Subcarrier Demodulator:
      229055 (Assy)
      229057 (Sch)
      229054 (B/D)
   b. 7.4 MHz Subcarrier Demodulator
      229060 (Assy)
      229062 (Sch)
      229054 (B/D)
   c. 6.2 MHz Cue Demodulator
      230230 (Assy)
      230232(Sch)
      229054 (B/D)
5. Extender boards are available to facilitate receiver servicing.
   a. Video Demodulator and IF Amplifier Extender 229501 (Assy)
   b. Video Clamp and Subcarrier Demodulators Extender 229504 (Assy)
6. An LNA powered by −15V dc on the RF output center pin may be driven by the dc LNA power inserter
   230074 (Assy)
7. A DC LNA and Scientific Atlanta Series 416 Modulator may be driven by the DC LNA 416 Modulator Power Cable
   234730 (Assy)

D3979-30

Figure 1-4. Series 6600 Video Receiver Configuration Chart

1.4.1.3 Model 6603 Downconverter. The Model 6603 downconverter is similar to the Model 6602 downconverter, except the Model 6603 downconverter does not include the remote programmability features. It will, however, drive an auto polarization relay.

1.4.2 IF AMPLIFIER

The downconverter 70-MHz IF output connects to IF amplifier module A5 located in the card cage via an interconnecting cable. The IF amplifier contains five pole-pair filter sections and a single section delay equalizer. An AGC loop maintains an IF output of -5 dBm over a 40-dB input dynamic range. The IF noise bandwidth is 32.4 MHz nominal. A carrier-to-noise (C/N) bus provides -1V per 10 dB of C/N.

1.4.3 VIDEO DEMODULATOR

Demodulation of the 70-MHz IF occurs in video demodulator module A6. This printed-wiring board contains a limiter, discriminator, de-emphasis, output drivers, and Scientific-Atlanta's patented threshold extension. The demodulator board drives all subcarrier boards, the video clamp, and the COMPOSITE BB connector on the rear panel.

1.4.4 VIDEO CLAMP

The video clamp module A7 contains a roofing filter which removes the subcarriers and a clamp which provides 40 dB of dispersal rejection. Video output level is adjustable on the front panel. Two video outputs are provided on the rear panel. A video alarm circuit provides -1 to -5V dc when video is present and 0 to -0.2V dc when video is absent. The source impedance is 220 ohms on this alarm output.

1.4.5 AUDIO

Program audio module A9 demodulates the 6.8-MHz audio subcarrier (part number 229050) and provides two balanced 600-ohm outputs on the rear of the receiver. Audio level is adjustable from the front panel. The subcarrier filter is approximately 500 kHz wide. The output roofing filter is a 15-kHz low-pass type. The 6.2-MHz program audio (part number 229070) may also be provided in slot A9 in lieu of the 6.8-MHz demodulator.

1.4.6 AC POWER SUPPLY

The 115V rms power supply, mounted on the left rear of the receiver, is provided as a standard item on the Series 6600 receivers. The ac power supply provides +15V dc and -15V dc to the other subassemblies of the receiver. The ac power supply, equipped with many protective features, is described in paragraphs 4.2.1 and 4.3.1. The optional -24V dc power supply, described in paragraph 4.3.12, may be provided in lieu of the ac power supply.

1.4.7 AUXILIARY BOARDS

Auxiliary board slot A8 can be utilized for one of two functions. A printed-wiring board which modulates the audio from program audio board A9 onto a 4.5-MHz subcarrier and adds this carrier to Video Output 2 can be provided in this position. Microwave systems can be driven directly from the receiver without an additional audio modulator. An audio demodulator can also be placed in this position for demodulation of additional subcarriers. One balanced 600-ohm output is provided on the rear panel from this position.

Auxiliary board slots A10 and A11 provide two additional positions for audio subcarrier demodulators. Board slot A10 provides a single 600-ohm output while board slot A11 provides two 600-ohm outputs. Board slots A8, A10. and A11 together provide for three subcarrier demodulators in addition to program audio board A9.

Additional links on the interconnecting printed-wiring board A3 between boards A8, A9, A10 and A11 permit pilot carriers from the program audio module to be demodulated. Refer to table 1-1 for a list of current options; the 6.2-MHz and 6.8-MHz program audio boards will operate properly in slot A9; all other audio boards may be operated from slots A8, A10, or A11.

1.5 SPECIFICATIONS

Table 1-2 lists the characteristics of the Series 6600 Video Receiver.

Video and audio threshold performance of the Series 6600 Video Receiver are given in figure 1-5, sheets 1 and 2, respectively. The demodulator operates without threshold extension down to a C/N of 12 dB. Threshold extension is automatically switched in at a C/N of 12 dB and below.

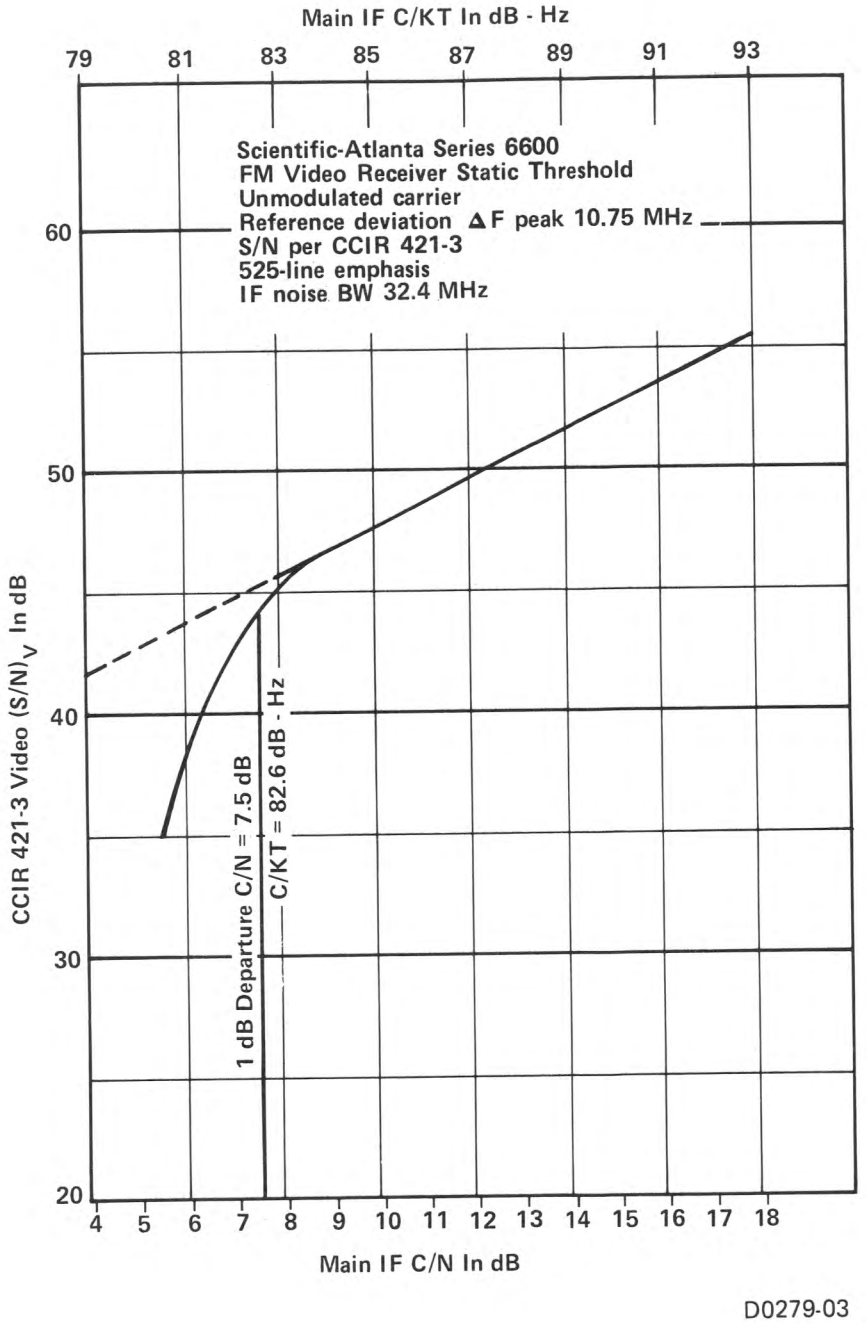


Figure 1-5. Series 6600 Video Receiver Threshold Performance (Sheet 1 of 2)

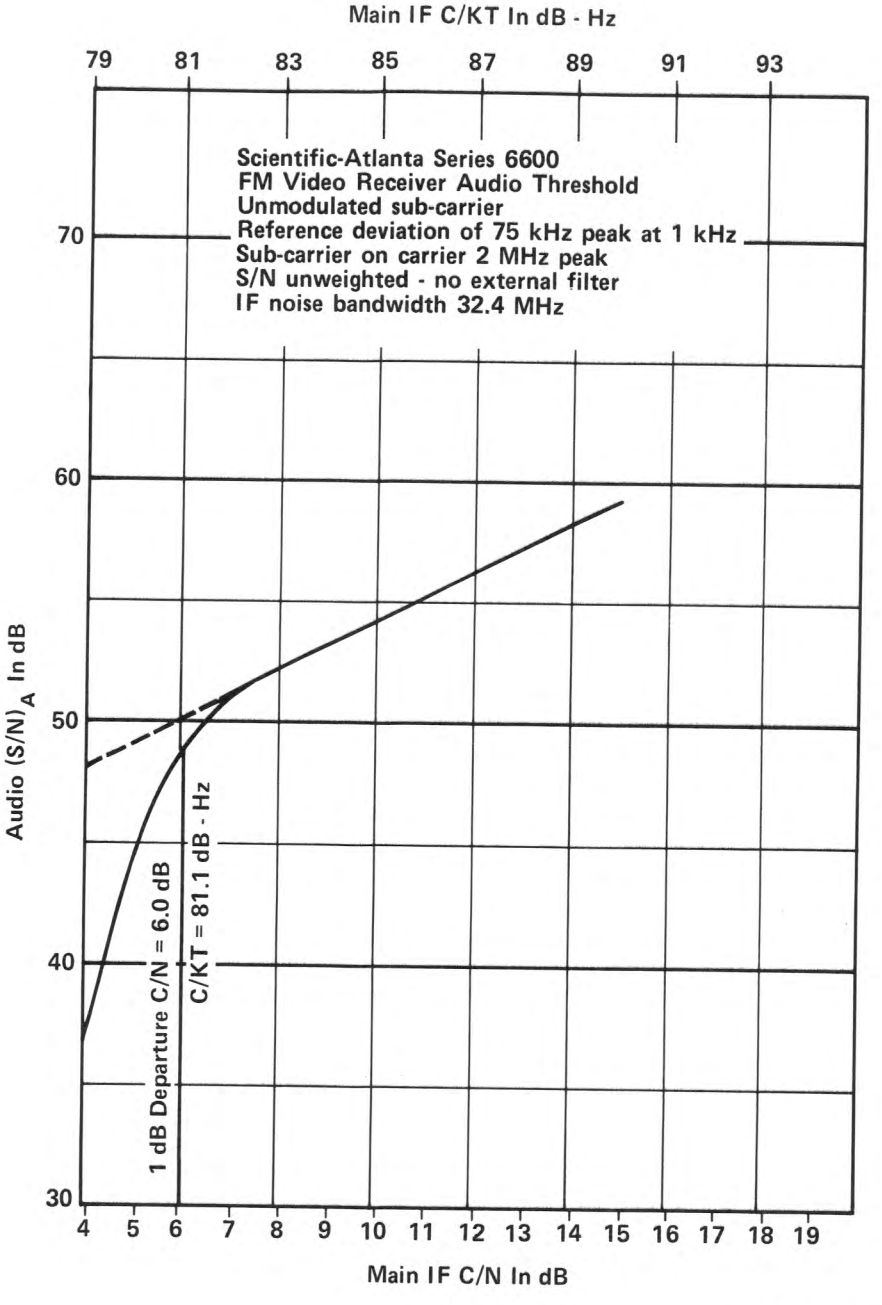


Figure 1-5. Series 6600 Video Receiver Threshold Performance (sheet 2 of 2)

TABLE 1-2. SERIES 6600 VIDEO RECEIVER, TECHNICAL CHARACTERISTICS

Characteristic	Specification
RF Input	
Maximum Level	-34 dBm
Frequency	3700 to 4200 MHz
Channel Selector	
Model 6601	Selection of channels is accomplished by changing crystals. No tuning is necessary.
Model 6602	Switch selectable - 24 channels, in 20-MHz increments. Frequency selection may be remote controlled.
Model 6603	Switch selectable - 24 channels, in 20-MHz increments.
Impedance	50 ohms
Return Loss	$\geq$ 20 dB
Noise Figure	15 dB maximum
Image Rejection	$>$ 60 dB
LO Leakage	$<$ -70 dBm
IF	
Intermediate Frequency	70 MHz
Effective Noise Bandwidth	32.4 MHz nominal
Impedance	75 ohms, unbalanced
Return Loss at IF Monitor Ports	$\geq$ 20 dB
Dynamic Operating Range	40 dB
Baseband	
De-Emphasis	525-Line (CCIR Rec. 405-1)
Deviation Range	6 to 12 MHz peak at de-emphasis crossover frequency
Video	
Video Level	1V p-p $\pm$3 dB adjustable
Response (15 Hz - 4.2 MHz)	
Standard	$\pm$0.5 dB
With TED	$\pm$1.0 dB
Impedance	75 ohms, unbalanced

TABLE 1-2. SERIES 6600 VIDEO RECEIVER, TECHNICAL CHARACTERISTICS - continued

Characteristic	Specification
Return Loss	≥ 26 dB
Polarity	Black-to-White: positive-going
Clamping	40-dB dispersal rejection
Line-Time Waveform Distortion	< 1% tilt
Field-Time Waveform Distortion	< 1% tilt
Differential Phase	< ±1° 10 to 90% APL
Differential Gain	< ±2.5% 10 to 90% APL
Audio	
Subcarrier Frequency	6.8 MHz standard, other frequencies available
Frequency Response	30 Hz to 15 kHz ±0.5 dB
De-Emphasis	75 μs
Output Level	Continuously variable, -10 to +10 dBm
Impedance	600 ohms, balanced
Harmonic Distortion	≤ 1%
Operating Temperature	0° to 50°C (32° to 122°F)
Mechanical	
Height	133.4 mm (5.25 inches)
Width	482.6 mm (19 inches)
Depth	482.6 mm (19 inches)
Power Requirements	
At 100 to 130V ac	100 watts (maximum)
At -19 to -32V dc (with optional power module)	Refer to paragraph 5.6.11.3

1.6 DC CURRENT CONSUMPTION OF SERIES 6600 RECEIVER CONFIGURATIONS

The present power supply in the Series 6600 Video Receiver is capable of supplying 1.5 amperes from each of the two output voltages (+15V and −15V). The unit is designed to go into current foldback (protection circuit) if for any reason the current drawn from either polarity exceeds 1.7 amperes (this is also applicable to the optional −24V dc power supply). Table 1-3 lists the current drawn from each polarity of the power supply for the eight receiver configurations described. Configuration item 8 indicates that the maximum current capability on the positive 15-volt supply of 1.5 amperes is being consumed.

TABLE 1-3. SERIES 6600 DC CURRENT CONSUMPTION

Item No.	Receiver Configuration	Current (A) Drawn from +15V Supply	Current (A) Drawn from -15V Supply
1	6601 Receiver with no options	0.66	0.67
2	6601 Receiver with 3 subcarrier demodulator options	0.82	0.75
3	6602 Receiver with no options	0.68	0.69
4	6602 Receiver with antenna relay	0.68	0.87
5	6602 Receiver with antenna relay and one dc powered LNA	0.79	0.87
6	6602 Receiver with antenna relay, one dc powered LNA, and a Model 416 Modulator	1.19	1.10
7	6602 Receiver with antenna relay, one dc powered LNA, three subcarrier demodulators, and a Model 416 Modulator	1.4	1.2
8	6602 Receiver with antenna relay, two dc powered LNA's, three subcarrier demodulators, and a Model 416 Modulator	1.5	1.2

NOTE: 6603 Receiver drain same as 6602 Receiver.

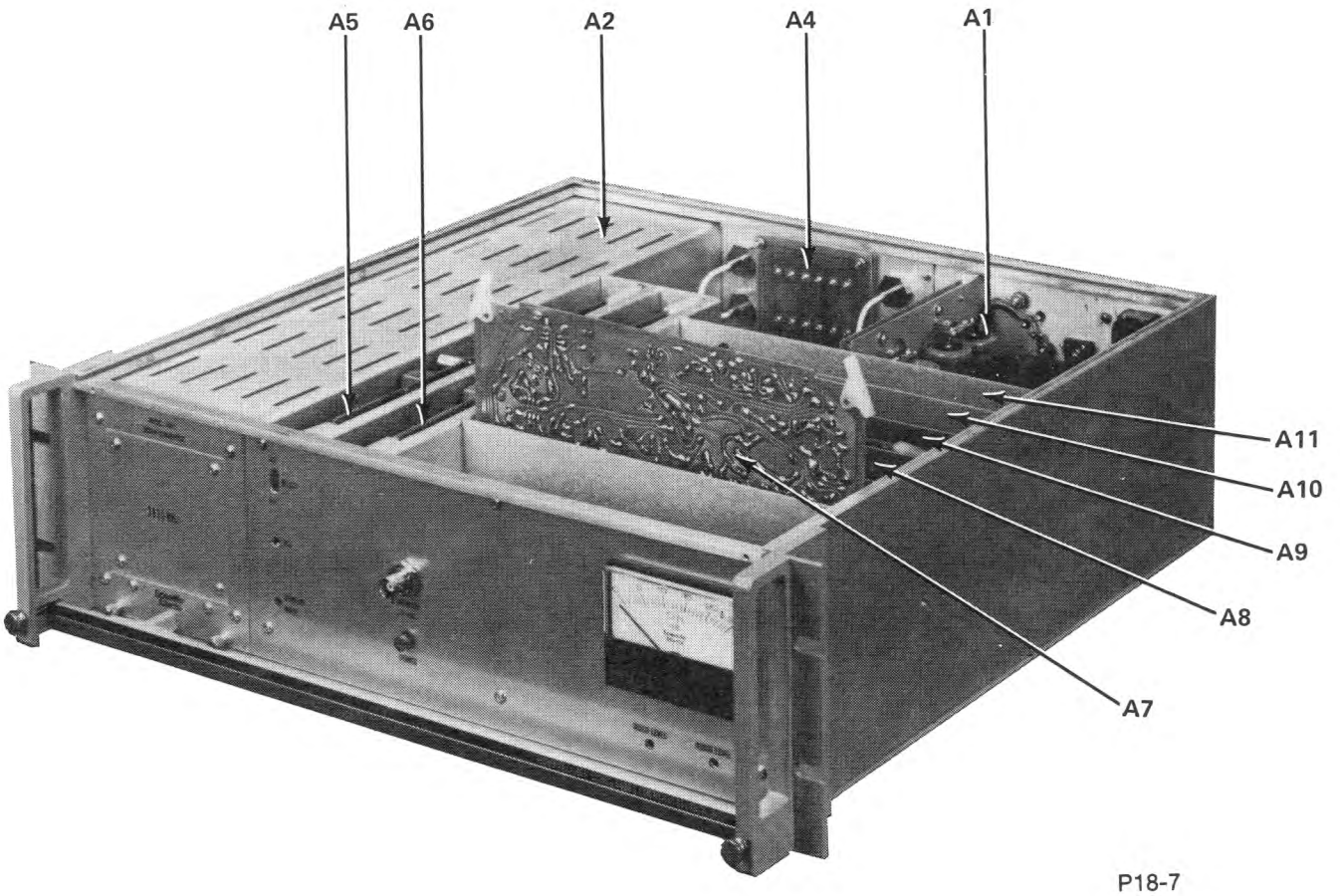
1.7 MECHANICAL DESCRIPTION

The receiver mainframe chassis is a pop-riveted assembly of aluminum sheet metal parts. The receiver is 5-1/4 inches high, has an overall length of 19 inches, and fits in the EIA standard 24-inch deep rack. The total weight of a typical configuration is 38 pounds.

Major input and output connections and the ac power line fuse are at the rear of the chassis. Monitor outputs and operating controls (except the POWER ON/OFF switch) are on the receiver front panel. The downconverter module is inserted from the front of the mainframe and is secured in the chassis by the front locking bar. The IF, video demodulator, video clamp, audio demodulator, and three auxiliary modules are plug-in printed-wiring boards connected by a large printed-wiring board. Access to the card cage is accomplished by removal of two captive, decorative screws and a slide-in top cover. Figure 1-6 is a photograph of the receiver and its card cage.

1.8 WARRANTY

Each standard catalog product manufactured by Scientific-Atlanta, Inc., is warranted to meet all published specifications and to be free from defects in material and workmanship. The company's liability under this warranty is limited to servicing or adjusting equipment and/or replacement of defective parts of any equipment returned to the factory, freight paid by buyer, within a period of one year from date of shipment from the factory, unless a shorter period is specified. Equipment showing damage by misuse, or abnormal conditions of operation, shall be excluded from this warranty.



NOTE

The Model 6601 receiver is shown; the card cage for the Models 6602 and 6603 are identical.

Figure 1-6. Series 6600 Video Receiver and Its Card Cage

Cable and other items manufactured by others and not made an integral part of equipment of Scientific-Atlanta's manufacture shall carry the original manufacturer's warranty.

Products manufactured by Scientific-Atlanta, Inc., to customer's specifications are warranted to be free of defects in material and workmanship and shall conform to all specifications made a part of the contract or purchase order. Inspection and acceptance shall be conclusive as to fulfulling this warranty, except as to latent defects, fraud, or such gross mistakes as to amount to fraud, providing, however, that all claims made or to be made for any reason must be made in writing within one year of shipment from Scientific-Atlanta's plant. The responsibility of Scientific-Atlanta under this warranty shall be limited to repair or replacement of defective work or parts returned to Scientific-Atlanta with transportation charges to Scientific-Atlanta's plant and return paid by buyer. Scientific-Atlanta, Inc., may at its option elect to correct any warranty defects by sending its supervisory or technical representative at Scientific-Atlanta's expense to customer's plant or location within the continental United States to make on-site corrections.

NOTE

Since Scientific-Atlanta, Inc., has no control over conditions of use, no warranty is made or implied as to suitability for customer's intended use, beyond such performance specifications as are made a part of the purchase order.

Equipment shipped f.o.b. Scientific-Atlanta's plant shall become the property of buyer upon delivery to and receipt from carrier. Damage in shipment should be handled by the buyer directly with the carrier (see paragraph 2.2.1).

NOTE

Do not return any Scientific-Atlanta product to the factory until shipping instructions are received.

When Scientific-Atlanta products require repairs after expiration of warranty period that necessitate factory return, the following steps should be taken.

a. Notify Scientific-Atlanta (see paragraph 2.2.2). Servicing or shipping instructions will be returned promptly.

b. In cases of factory return, an estimate of the charges will be made before repairs are undertaken, if desired.

If additional technical information is needed, please call the Communications Group Product Support Department: Toll-free, 800-241-1966 outside Georgia; in Georgia, 404-925-5300.

SECTION 2
INSTALLATION

2.1 GENERAL

This section contains information required to unpack and install the Series 6600 Video Receiver.

2.2 UNPACKING AND INSPECTION

While unpacking, carefully compare bill of lading with equipment, checking for transit damage at the same time. Should errors be noted, notify Scientific-Atlanta and the carrier as soon as possible, but only after double checking and sifting any packing materials.

2.2.1 DAMAGE OR LOSS DURING SHIPMENT

When equipment is damaged or lost in transit, the delivering transportation company is required by law to make notation of damage or loss on the freight bill. The **carrier** and **not the shipper** should be charged with all damage or loss. In the event of damage or loss during shipping, contact the responsible carrier of the equipment. **Save the shipping carton. The inspector must examine the carton prior to completion of the inspection report.**

2.2.2 EQUIPMENT RETURN

Scientific-Atlanta makes a genuine effort to ensure that all items arrive safely and in working order. Occasionally despite these efforts, equipment will be received which is not in working condition.

When this occurs and it is necessary to return the equipment to the manufacturer for either repair or replacement, or when operational equipment requires repair, the return can be expedited if the following procedure is followed:

a. Tag or identify the defective equipment and note the defect and circumstances, if any.

b. Reference the sales order and purchase order and the date the equipment was received.

c. Notify Scientific-Atlanta's Product Support Department (page 1-14) of the defect and request shipping instructions.

2.3 INSTALLATION

Ease of installation is an important advantage of Scientific-Atlanta's Series 6600 Video Receiver. The downconverters and power supplies are modular units. The downconverter plugs in from the front of the receiver. The power supply is packaged in a rugged module installed at the rear of the receiver with four screws and a single connector. The other units are plug-in printed-wiring boards housed in individual card cage bays. Access to the card cage bays is accomplished by removal of two captive, decorative screws and a slide-in top cover (see figure 1-6).

2.3.1 PHYSICAL REQUIREMENTS

2.3.1.1 Operating Power (AC Input). For receivers utilizing ac power input (the standard configuration), the nominal line voltage is 115V ac at 50 or 60 Hz. The power supply will perform satisfactorily with an input voltage from 100V to 130V.

CAUTION

DAMAGE TO THE RECEIVER WILL RESULT IF 230V AC IS APPLIED AT THE AC INPUT.

2.3.1.2 Operating Power (DC Input). An optional power supply utilizing dc power sources is provided for a nominal input voltage of -24V dc. The power supply will perform satisfactorily with an input voltage from -19V to -32V dc. The maximum dc line power consumption is 64 watts.

2.3.1.3 Operating Temperature. The receiver should not be operated with the temperature inside the chassis higher than 50°C (122°F).

CAUTION

PROLONGED OPERATION OF THIS INSTRUMENT ABOVE MAXIMUM SPECIFIED OPERATING TEMPERATURE CAN VOID THE WARRANTY.

The slotted top cover of the receiver allows ventilation and should never be completely obstructed. If this unit is installed in an enclosure with other

equipment that generates heat, forced-air cooling should be provided. Location of the blower near the bottom of the enclosure will be most effective, since it will then work with, rather than against, the natural-convection air currents.

2.3.2 RACK MOUNTING

The Series 6600 Video Receiver is designed for mounting in an EIA standard 19-inch wide, 24-inch deep rack and is to be supported by optional brackets or rack slides.

CAUTION

IT IS NOT RECOMMENDED THAT THE RECEIVER BE INSTALLED SO THAT IT IS SUPPORTED BY THE FRONT PANEL. USE OPTIONAL BRACKETS OR RACK SLIDES.

The optional rack slides provided with the receiver are manufactured to EIA/Universal RETMA standards and are compatible with any 24-inch EIA/Universal RETMA enclosed rack. The slides are provided with front disconnect and lockout as standard features. The tools required are a Phillips-head screwdriver and a flat-bladed screwdriver.

2.3.2.1 Right Slide Installation Procedure. Refer to figure 2-1 for the following procedure.

a. Extend the slide to full length and disconnect the chassis member from the rack member by tripping the lock release lever.

b. Assemble chassis member to the chassis using two No. 8-32 x 1/4L pan-head screws, taking care not to strip the chassis side panel. (Lock release lever should face the front of the chassis.)

c. Assemble mounting brackets to the front and rear of the rack member using two No. 8-32 flat-head screws and two No. 5652 nut plates. The front bracket should protrude 1.60 inches minimum from the rack member. Brackets should be mounted loosely to permit final adjustment to rack length.

d. Adjust mounting brackets to overall rack length and tighten bracket-slide interconnecting screws.

e. Assemble rack member into the rack as shown in figure 2-1, using four No. 10-32 flat-head screws and two No. 5641 nut bars. Leave screws loose to allow final adjustment after chassis insertion.

2.3.2.2 Left Slide Installation Procedure. The left side mounting procedure is identical to the right side installation.

2.3.2.3 Chassis Mounting. Insert the chassis into the rack, engaging the chassis and rack members of the slide. Adjust positioning, if necessary, to ensure free travel of the chassis. Tighten the screws mounting the slides into the rack.

2.3.3 INPUT/OUTPUT CONNECTIONS

Input and output connections, except front-panel monitor outputs, are made from the rear of the chassis. Some connectors are on the rear panel of the downconverter. Others are located on a connector panel that is a part of the mainframe (see figures 2-2 and 2-4). Input and output connector functions are summarized in table 2-1.

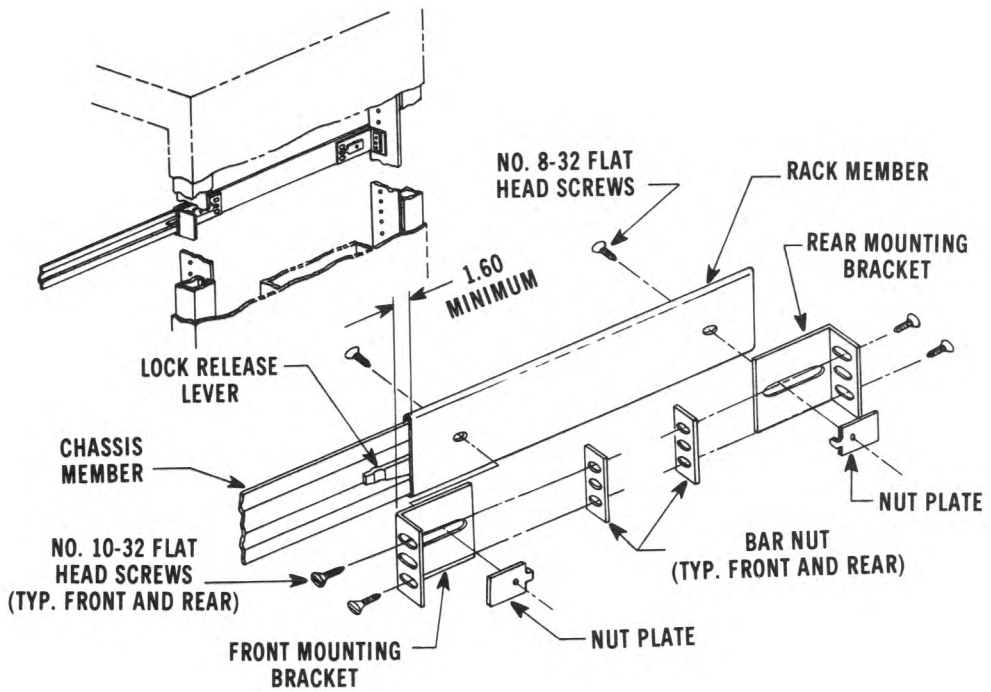


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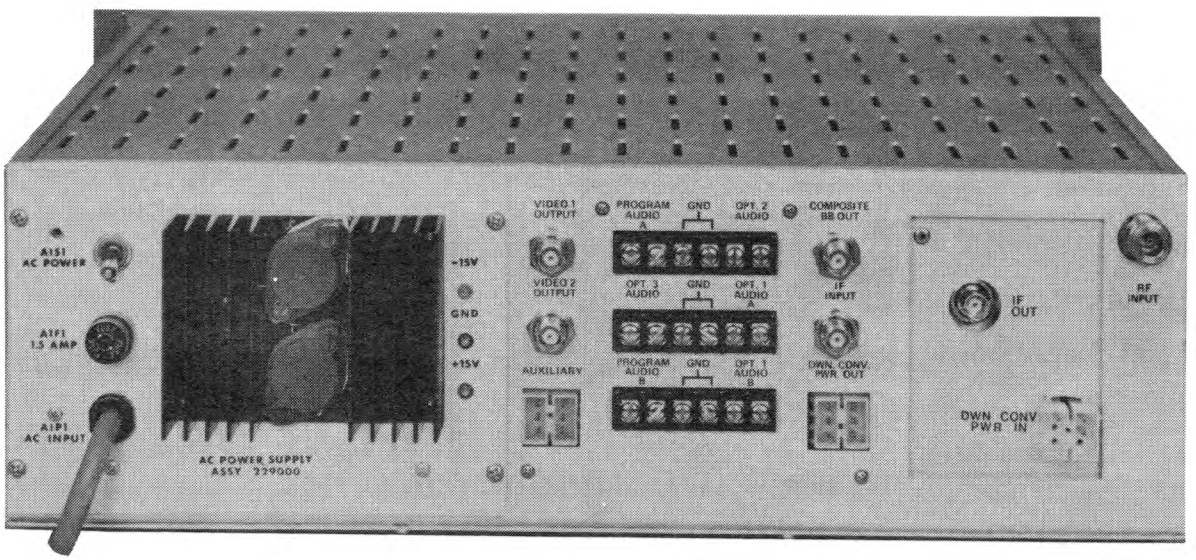
Figure 2-1. Series 6600 Rack Slide Mounting Configuration



P18-9

Figure 2-2. Model 6601 Video Receiver Rear-Panel Input/Output Connectors

TABLE 2-1. SERIES 6600 REAR-PANEL INPUT/OUTPUT CONNECTORS

Connector/Control	Function/Description
POWER SUPPLY	
A1S1 AC POWER	Toggle switch controls input of ac power
A1F1 Fuse	1.5-ampere fuse
A1P1 AC INPUT	Permanently attached power cord, 115V ac
-15V	Test Point
GND	Test Point
+15V	Test Point
MAIN CHASSIS	
VIDEO 1 OUTPUT & VIDEO 2 OUTPUT	BNC-type; two identical video outputs. Nominal 1V p-p level, controlled from front-panel VIDEO LEVEL. VIDEO 2 OUTPUT will provide 4.5-MHz subcarrier if option is included.
COMPOSITE BB OUT	BNC-type; 1V p-p nominal; no adjustment. Includes all subcarriers and dispersal.
IF INPUT	BNC-type; IF input from downconverter
AUXILIARY	6-pin male socket; +15V, gnd, C/N, and video alarm to mate with protection switch (refer to table 2-2 for pin functions).
DWN CONV PWR OUT	6-pin connector supplying +15V, -15V, and ground to downconverter.
PROGRAM AUDIO A & PROGRAM AUDIO B	Two identical balanced outputs from program audio printed-wiring board in card slot A9. Output level controlled from front-panel AUDIO LEVEL control.
OPT 1 AUDIO A & OPT 1 AUDIO B	Two identical balanced outputs from the printed-wiring board installed in card slot A11. Output level controlled on printed-wiring board. This slot may be used for purposes other than audio, in which case these terminals may have another application.
OPT 2 AUDIO	Balanced output from the printed-wiring board installed in card slot A10; level control on printed-wiring board. This slot may be used for purposes other than audio, in which case these terminals may have another application.
OPT 3 AUDIO	Same as OPT 2 AUDIO, except applies to printed-wiring board installed in card slot A8.
DOWNCONVERTER	
RF INPUT	N-type connector for RF input, 3.7 - 4.2 GHz; -34 to -64 dBm.
IF OUT	BNC-type connector, IF out to IF in connector on main chassis.
DWN CONV PWR IN	Accepts power on a jumper from DWN CONV PWR OUT on main chassis.

TABLE 2-2. SERIES 6600 AUXILIARY CONNECTOR PIN FUNCTIONS

Pin Number	Function
1	-15V
2	+15V
3	GND
4	C/N Alarm
5	Cue/Subcarrier Alarm (Optional)
6	Video Presence Alarm

2.3.4 MODEL 6601 DOWNCONVERTER CRYSTAL INSTALLATION

The downconverter crystal can be changed by the following procedure (refer to figure 2-3).

a. Remove the four screws that secure the crystal cover to the downconverter front panel.

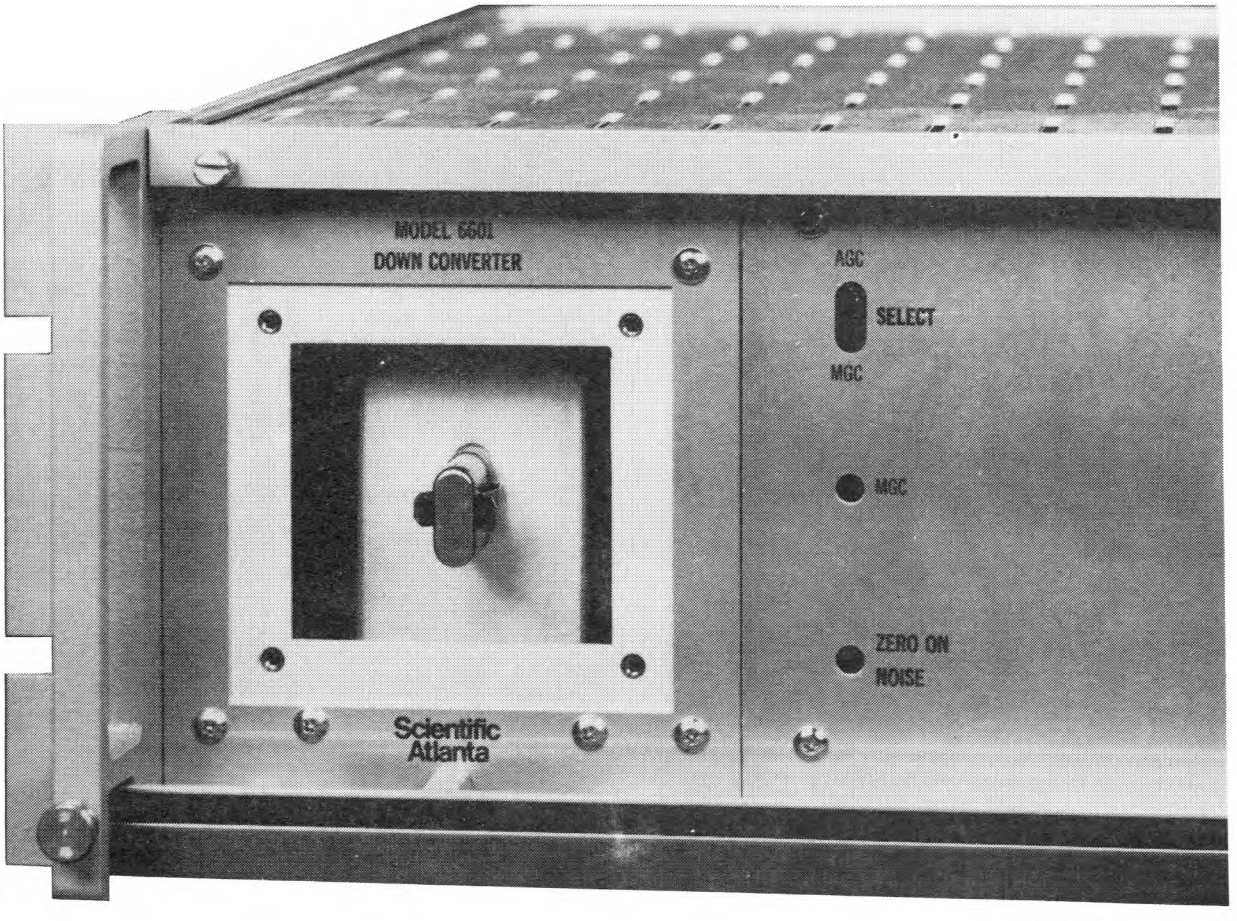
b. Remove the crystal presently installed and plug in the new crystal.

c. Install the appropriate cover (with the crystal frequency marked) to the downconverter front panel with the screws removed in step a.

2.3.5 MODEL 6602 RECEIVER CONNECTIONS

The Model 6602 receiver is capable of being electrically tuned to any of the 24 satellite channels (table 3-1). To facilitate this capability, a 10-position connector labeled PROGRAM is located on the rear of the Model 6602 agile downconverter. The program connector is also utilized by the Auto Polarization Switching option. Pin 8 is driven by an open collector PNP transistor (Q5). It is capable of sinking up to 250 mA from a negative supply of up to 28 volts dc. By using a 15-volt dc relay or the Auto Polarization Option Kit the receiver supply (-15 volts dc) may be used (pin 9). Transistor Q5 is saturated, energizing the relay, when the Model 6602 receiver is manually or electrically tuned to a horizontally polarized channel; Q5 is cut off when the Model 6602 receiver is tuned to a vertically polarized channel.

Table 2-3 provides the function/description of the PROGRAM connector pins. The location of the PROGRAM connector is shown in figure 2-4.

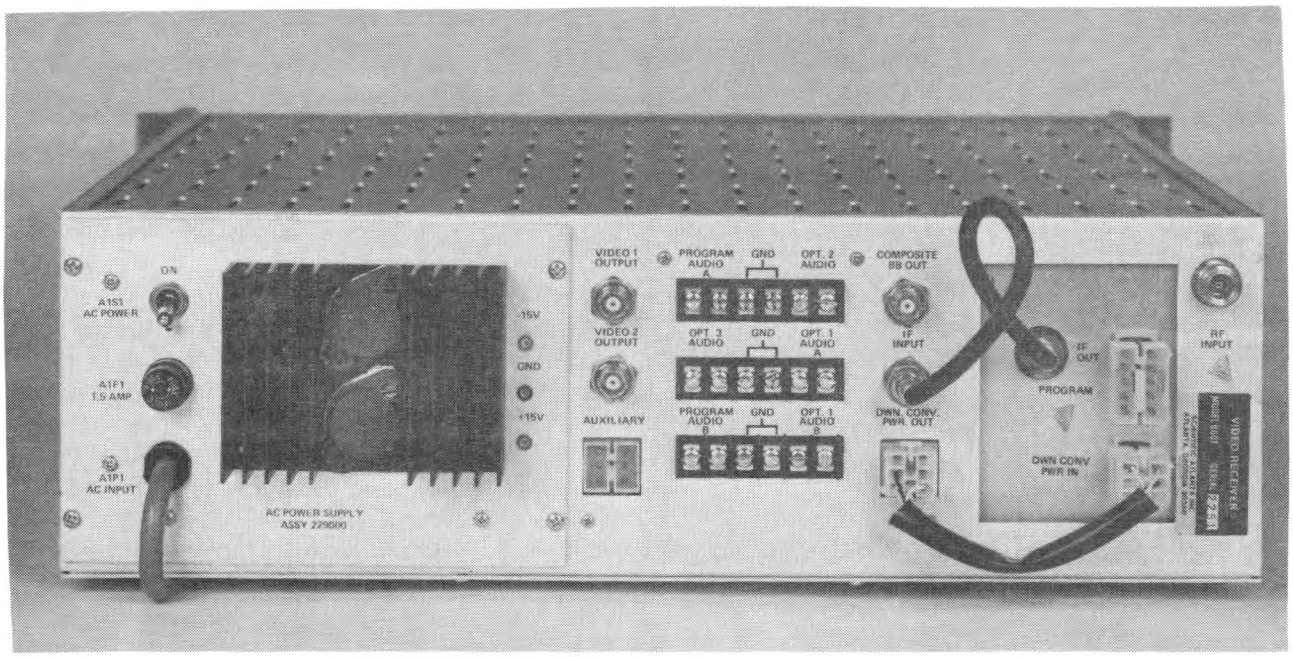


P18-5

Figure 2-3. Model 6601 Video Receiver with Plug-In Crystal

TABLE 2-3. MODEL 6602 UNIQUE REAR PANEL CONNECTIONS

Connector/Control	Function/Description
PROGRAM Pin Number	
1	"A Set" frequency control line. Video protection switch J43-4. 414 Video RCVR equivalent J3-4.
2	"B Set" frequency control line. Video protection switch J43-5. 414 Video RCVR equivalent J3-5.
3	"C Set" frequency control line. Video protection switch J43-6. 414 Video RCVR equivalent J3-6.
4	"D Set" frequency control line. Video protection switch J43-7. 414 Video RCVR equivalent J3-8
4	"D Set" frequency control line. Video protection switch J43-7. 414 Video RCVR equivalent J3-8
5	"E Set" frequency control line. Video protection switch J43-8. 414 Video RCVR equivalent J3-10.
6	"F Set" frequency control line. Video protection switch J43-10. 414 Video RCVR equivalent J3-12.
7	Local/Remote. Ground for remote.
8	Open collector transistor, PNP.
9	-15 Volts dc
10	Ground



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NOTE

The PROGRAM connector on the Model 6602 downconverter module is the only difference from the Model 6601 rear view (see figure 2-2).

The Model 6603 downconverter module has only two pins installed in the 10-position connector at the rear. These two pins drive the auto polarization relay.

Figure 2-4. Model 6602 Video Receiver Rear View

2.3.6 MODEL 6603 RECEIVER CONNECTIONS

The Model 6603 receiver channel selection is accomplished via a 24-position rotary switch. Remote programming features are not included. The Model 6603 downconverter will drive the auto polarization relay. Refer to paragraph 2.3.5 for a description of the auto polarization relay.

2.3.7 4.5-MHz SUBCARRIER MODULATOR 229045

WARNING

TURN OFF POWER TO THE RECEIVER BEFORE STARTING THE INSTALLATION OF THE 4.5-MHz SUBCARRIER MODULATOR.

The 4.5-MHz subcarrier modulator can be installed by the following procedure:

a. Remove the two captive, decorative screws on the front, top locking bar.

b. Slide out the top cover of the receiver.

c. Insert the 4.5-MHz subcarrier modulator printed-wiring board into auxiliary board slot A8.

d. R5 and R50 potentiometers adjustment procedure:

1. Connect an oscilloscope (with a minimum 15-MHz bandwith) to the VIDEO 2 OUT connector (on the rear of the receiver) in parallel with a 75-ohm load.

2. Apply power to the receiver. Adjust R50 (left-hand potentiometer when viewed from the front) fully counterclockwise (CCW). Observe the oscilloscope for the sync tips similarly to that shown in figure 2-5.

3. Adjust potentiometer R50 (see note) for a 0.1V peak-to-peak indication on the oscilloscope (see figure 2-6). After this level is obtained, remove the oscilloscope and 75-ohm lead from the VIDEO 2 OUT connector of the receiver.

NOTE

Clockwise adjustment of potentiometer R50 increases the voltage level.

4. Verify that the front panel AUDIO LEVEL control is adjusted for the desired output level. Adjust potentiometer R5 (right-hand potentiometer on the board when the receiver is viewed from the front) either clockwise or counterclockwise until the LED indicator DS1 (OVERDEVIATION) on the board flashes at infrequent intervals.

NOTE

Adjusting the AUDIO LEVEL control (figure 3-1) on the front of the receiver will also affect the position of potentiometer R5. Adjusting the AUDIO LEVEL control will require readjustment of R5. Either control may be used to vary the frequency deviation of the 4.5-MHz subcarrier. The DSI OVERDEVIATION indicator illuminates when the deviation exceeds 25 kHz.

e. Slide in the top cover of the receiver.

f. Install the two captive, decorative screws on the front, top locking bar.

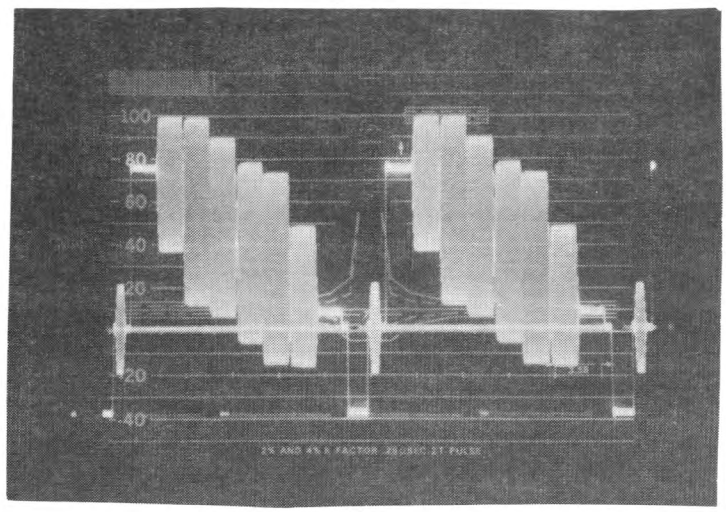


Figure 2-5. Video Output Without the 4.5-MHz Subcarrier

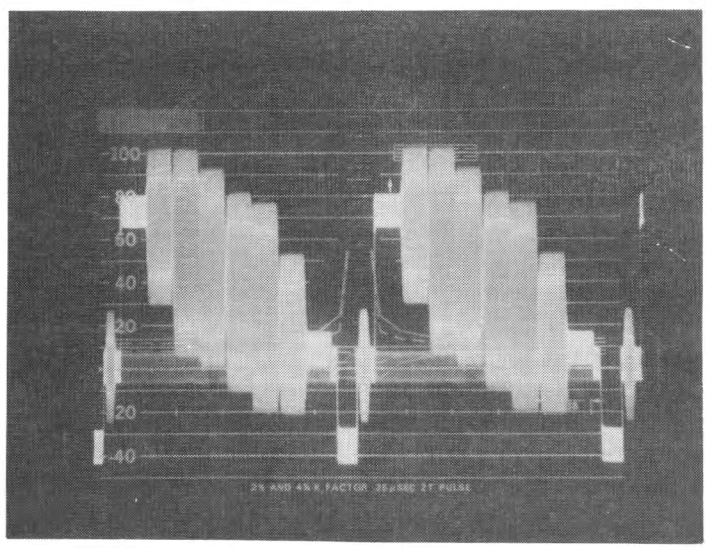


Figure 2-6. Video Output With the 4.5-MHz Subcarrier

SECTION 3
OPERATION

3.1 GENERAL

This section provides operating instructions that apply to the Series 6600 video receiver.

NOTE

VIDEO LEVEL should be set for 1V p-p. The AUDIO LEVEL should be set for 0 dBm into 600 ohms.

3.1.1 CONTROLS AND INDICATORS

All operating controls and indicators for the Model 6601 and Model 6602 Video Receiver are identified and described in figures 3-1 and 3-2, respectively.

3.1.2 PREPARATIONS

Carefully check the rear panel to be sure that input and output signals have been properly connected, and that the connectors used are the correct types. Connect any monitoring devices that are to be used.

3.2 TURN-ON PROCEDURE

a. Connect the permanently connected power cord to a source of 115V ac, 50 to 60 Hz.

b. Set the AC POWER switch on the rear panel to the ON position. The POWER indicator on the front panel should illuminate.

CAUTION

Do not remove or insert a module or printed-wiring board with power applied. Always turn off the receiver.

c. The POWER switch, when set to the other position will remove power from the receiver. The POWER indicator on the front panel should extinguish.

3.3 FREQUENCY SELECTION

a. For Model 6601 (downconverter 228980), select an input by plugging in the appropriate crystal (refer to table 3-1).

NOTE

One crystal corresponding to the frequency specified by the customer is installed at the factory. The crystal front cover marked with the appropriate frequency is also installed at the factory.

If it is necessary to change downconverter crystals, follow the instructions in paragraph 2.3.4.

b. For Model 6602 (with frequency agile downconverter), the received frequency is determined by a synthesized local oscillator (refer to table 3-1). The 24 channels are selectable by a front-panel rotary switch, or electrically via the rear panel 10-position PROGRAM connector. See paragraph 3.6 for programming instructions.

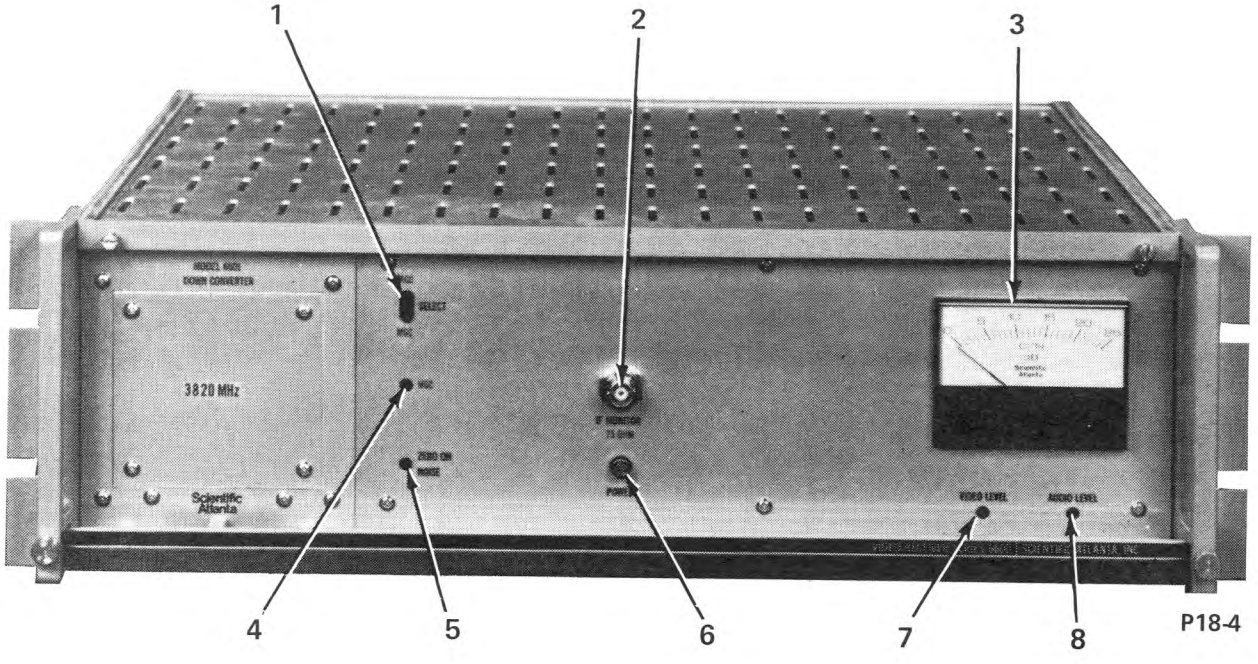
c. For Model 6603, the received frequency is determined by a synthesized local oscillator. The 24 channels are selectable by a front panel rotary switch only.

3.4 ZEROING OF CARRIER-TO-NOISE

In order to zero the C/N meter, the operator must first remove the incoming signal so that the receiver's input consists only of noise. This can be done by pointing the antenna a few degrees away from the satellite. With a "noise only" input to the receiver and the AGC/MGC switch in the AGC (normal) position, use the ZERO ON NOISE control to set the meter indicator to zero.

3.5 METERING

The C/N meter on the front panel can be used to verify a malfunction in the receiver. If the C/N meter has been properly zeroed, the carrier-to-noise ratio during normal operation should range between 10 dB and 20 dB. A reading of 8 dB to 10 dB warns of a potential problem, and a ratio of less than 8 dB indicates a failure in an earth station component (antenna, low noise amplifier, or receiver) or the satellite downlink.



1. AGC-MGC: THROW DOWN FOR MGC; UP FOR AGC. AGC IS NORMAL SWITCH POSITION.
2. IF MONITOR: IF (70 MHz) OUTPUT. 75 OHMS, BNC, FEMALE.
3. C/N METER: MEASURES CARRIER-TO-NOISE (dB).
4. MGC: SCREWDRIVER ADJUSTMENT FOR MANUAL GAIN CONTROL.
5. ZERO ON NOISE: SCREWDRIVER ADJUSTMENT TO ZERO THE CARRIER-TO-NOISE METER ON A "NOISE ONLY" INPUT.
6. POWER INDICATOR: ILLUMINATED WHEN OPERATING POWER IS APPLIED.
7. VIDEO LEVEL: SCREWDRIVER ADJUSTMENT FOR LEVEL OF OUTPUT VIDEO SIGNALS.
8. AUDIO LEVEL: SCREWDRIVER ADJUSTMENT FOR LEVEL OF PROGRAM AUDIO OUTPUT.

Figure 3-1. Model 6601 Receiver Controls and Indicators

A. FREQUENCY SELECT KNOB: ANY OF 24 SATELLITE TRANSPONDER FREQUENCIES MAY BE SELECTED (SEE TABLE 3-1).
B. REMOTE FREQUENCY INDICATOR: ILLUMINATES WHEN FREQUENCY SELECT KNOB IS SET TO THE FREQUENCY BEING COMMANDED TO REAR PROGRAM CONNECTOR.
C. REMOTE INDICATOR: ILLUMINATES WHEN THE REMOTE FREQUENCY MODE IS SELECTED.

NOTE

Items 1 through 8 for the Model 6601 receiver (figure 3-1) have identical function in the Model 6602 receiver.

Shown is the Model 6602 receiver. The Model 6603 receiver is similar, except items B and C are not present.

Figure 3-2. Models 6602 and 6603 Receiver Unique Controls and Indicators

TABLE 3-1. SATELLITE TRANSPONDER FREQUENCIES

Single Polarization Satellite Transponder Number (Note 1)	Dual Polarization Satellite Transponder Number (Note 2)	Center Frequency (MHz)
1	1 (V)	3720
	2 (H)	3740
2	3 (V)	3760
	4 (H)	3780
3	5 (V)	3800
	6 (H)	3820
4	7 (V)	3840
	8 (H)	3860
5	9 (V)	3880
	10 (H)	3900
6	11 (V)	3920
	12 (H)	3940
7	13 (V)	3960
	14 (H)	3980
8	15 (V)	4000
	16 (H)	4020
9	17 (V)	4040
	18 (H)	4060
10	19 (V)	4080
	20 (H)	4100
11	21 (V)	4120
	22 (H)	4140
12	23 (V)	4160
	24 (H)	4180

NOTES: 1. Transponder assignments for 12-channel satellites are all horizontally polarized.

2. Transponder assignments for 24-channel satellites are horizontally polarized for the even-numbered transponders and vertically polarized for the odd-numbered transponders.

3.6 ADDITIONAL CONTROLS UNIQUE TO MODEL 6602

Two indicators are located on the front panel of the frequency agile downconverter. The yellow REMOTE indicator illuminates when the downconverter is commanded to the remote mode connector (grounding pin 7 of PROGRAM connector. Pin 10 of PROGRAM connector is ground). In this mode the channel selected is determined by the code on the rear panel PROGRAM connector, pins 1 through 6. The FREQUENCY SELECT knob may then be used in conjunction with the green REMOTE FREQUENCY indicator to determine the frequency to which the receiver is programmed. When the FREQUENCY SELECT knob is rotated to the position which illuminates the REMOTE FREQUENCY indicator, the indicated frequency is the remotely programmed frequency.

With the receiver in the remote mode, the operator has a choice of two methods of frequency programming. Frequency programming is controlled by the PROGRAM ARRAY. The PROGRAM ARRAY is six groups of six pin pairs located along the top of the Interface Logic Board in the frequency agile downconverter. The first group of six pin pairs is SET A. The pin pairs of this group are labeled A1, A2, A3, A4, A5, and A6. The second group is SET B, the third group is SET C, etc.

In the six-bit mode, all 24 satellite transponders are remotely selectable. This mode is activated by installing program jumpers on the PROGRAM ARRAY pin pairs A1, B2, C3, D4, E5, and F6. In this mode, the six-bit code present on the PROGRAM connector on the frequency agile downconverter rear panel determines the transponder to which the receiver is tuned. The code required for each transponder may be read from table 3-2.

In the cherry-pick mode, any six of the 24 satellite transponders are remotely programmable. The advantage of the cherry-pick mode is that only one line of the PROGRAM connector requires a logic low for each of the six transponders selected. The operator selects the six transponders desired by installing program jumpers on the PROGRAM ARRAY in the appropriate pattern. Program jumpers are installed on each PROGRAM ARRAY SET (A, B, etc.) in a pattern read from table 3-2. For example, to program a transponder frequency of 4020 MHz on SET B, program jumpers are installed on B2 and B4. To command the receiver to 4020 MHz, PROGRAM connector pin 2 is placed at logic low. SET A is commanded by PROGRAM connector pin 1, SET B by pin 2, SET C by pin 3, etc.

The frequency agile downconverter, when used in conjunction with the Auto Polarization Option Kit (part number 230072), automatically switches the appropriate horizontal or vertical antenna line into the receiver. This allows convenient selection of all 24 transponder frequencies via the front panel rotary switch or remotely via the PROGRAM connector. The Auto Polarization Option Kit includes an RF coaxial relay with a 15-volt dc coil, a coaxial cable to connect the relay and receiver, and a cable/connector which plugs into the PROGRAM connector.

TABLE 3-2. MODEL 6602 CODE USED FOR REMOTE-CONTROLLED TRANSPONDER SELECTION

Center Frequency (MHz)	(1) PROGRAM Connector Pin Number (See Note 1) (2) PROGRAM ARRAY "SET" Pin Pair Number (See Note 2)					
	1	2	3	4	5	6
3720	●	●	●	●		
3740	●	●	●	●		●
3760	●	●	●	●	●	
3780	●	●	●	●	●	●
3800					●	●
3820				●		
3840				●		●
3860				●	●	
3880				●	●	●
3900			●		●	●
3920			●	●		
3940			●	●		●
3960			●	●	●	
3980			●	●	●	●
4000		●			●	●
4020		●		●		
4040		●		●		●
4060		●		●	●	
4080		●		●	●	●
4100		●	●		●	●
4120		●	●	●		
4140		●	●	●		●
4160		●	●	●	●	
4180		●	●	●	●	●

NOTE: 1. In the 24-channel mode, (●) indicates those PROGRAM connector pins which must be logic low to select the desired transponder channel. Logic low may be accomplished by switch or relay closure to ground (pin 10, PROGRAM connector) or between 0 and +0.5 volts, referenced to ground. A1, B2, C3, D4, E5, and F6 PROGRAM ARRAY pin pairs must have program jumpers.

2. In the six-channel mode, (●) indicates those pin pair numbers of a SET which must have program jumpers to program a SET to the desired transponder channel. A logic low on PROGRAM connector pin 1 will command the receiver to the transponder programmed on SET A. PROGRAM connector 2 commands SET B, pin 3 commands SET C, etc.

SECTION 4
THEORY OF OPERATION

4.1 GENERAL

This section covers the theory of operation of the Scientific-Atlanta Series 6600 Video Receiver. Effective troubleshooting of the receiver is not possible without a suitable understanding of the theory of operation of the unit. Therefore, it is recommended that this section be studied thoroughly before attempting to determine what module in the receiver is defective.

4.2 BLOCK DIAGRAM DISCUSSION

Figure 4-1 shows a block diagram of the overall video receiver.

Functionally, the Series 6600 Video Receivers accept frequency modulated RF carriers in the 3.7- to 4.2-GHz band and demodulate these carriers to retrieve both video and audio baseband information. Clamping is provided to remove energy dispersal and de-emphasis is performed on both the video and audio baseband signals.

The RF input first passes through a dual-conversion downconverter (A2) which heterodynes the RF signal down to a 70-MHz IF signal. Module A5 is a 70-MHz IF amplifier which amplifies and bandlimits the signal to approximately 30-MHz centered at 70-MHz. The effective noise bandwidth of the IF is 32.4 MHz nominal after passing through the IF amplifier. Since the maximum input signal to the receiver is -34 dBm and the downconverter has a nominal gain of 19 dB, the IF amplifier has been designed to provide a gain range of 10 dB to 50 dB. IF level into the following module is held at -5 dBm.

The IF signal passes into video demodulator module A6 where a discriminator retrives the original baseband signal. The band of interest is approximately 1 Hz to 10 MHz. Video demodulator module A6 contains a de-emphasis circuit. A composite baseband signal is provided on the rear panel which contains the complete demodulated baseband spectrum.

One output of the A6 module passes into the video clamp module A7 where all of the subcarriers are low-pass filtered off and the remaining video information is clamped to remove dispersal. Video baseband and sync information are separated in the video clamp module A7. Baseband video from the video clamp module A7 is provided on the rear panel of the receiver. Two outputs are provided, one of which passes by connector pins on auxiliary module A8 which can contain a 4.5-MHz subcarrier modulator. If this module is utilized, VIDEO 2 OUTPUT will have a 4.5-MHz subcarrier modulated signal retrieved by program audio module A9.

Another output from the video demodulator module A6 is connected to module positions A8 through A11. Program audio and auxiliary audio demodulators can be utilized in these positions for retrieving audio basebands transported on subcarriers. Card slots A9 and A11 have two 600-ohm outputs each, while the remaining slots provide one output each.

Receiver power is derived from module A1 which is normally a ±15 volt, 1.5-ampere power supply powered by 115V ac. A dc powered option is available which is powered from a -24V dc source.

Interconnecting board A3 and connector board A4 are utilized for module and module-to-panel interface.

4.2.1 AC POWER SUPPLY A1

Figure 4-2 shows the block diagram of the ac power supply. Input ac power of 115 ±15V rms at 50 or 60 Hz is applied through the permanently attached power cord A1P1 and fuse A1F1 (1.5A) to AC POWER switch A1S1. The ground line of the ac cord is connected internally to the metal chassis.

Raw dc voltages developed across the 3200 μF filter capacitors by the dual voltage fullwave rectifier system are routed through internal fuses F2 and F3 to the positive and negative series regulators. Outputs from the regulators are coupled through short-circuit protection circuits to the dc power connector A1J1.

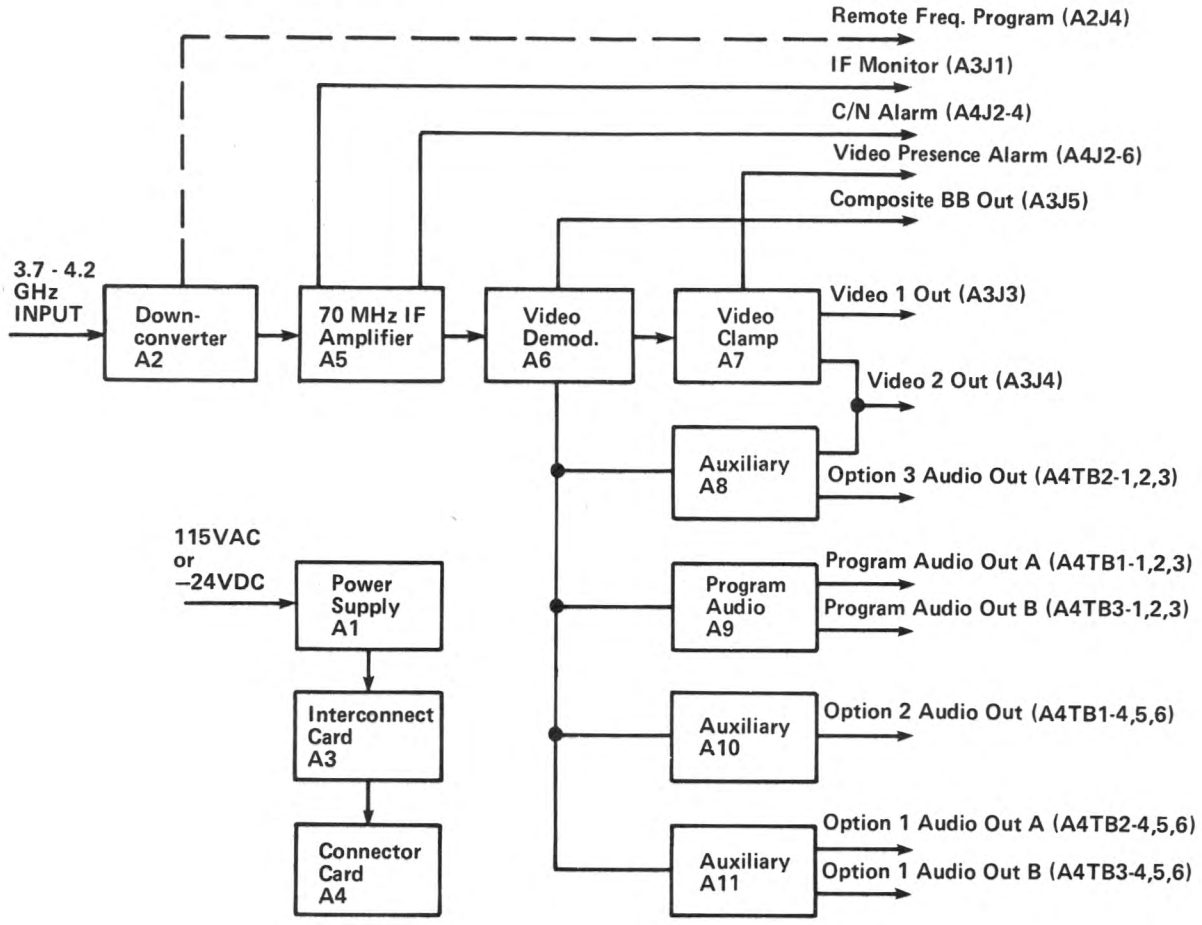


Figure 4-1. Series 6600 Video Receiver Block Diagram

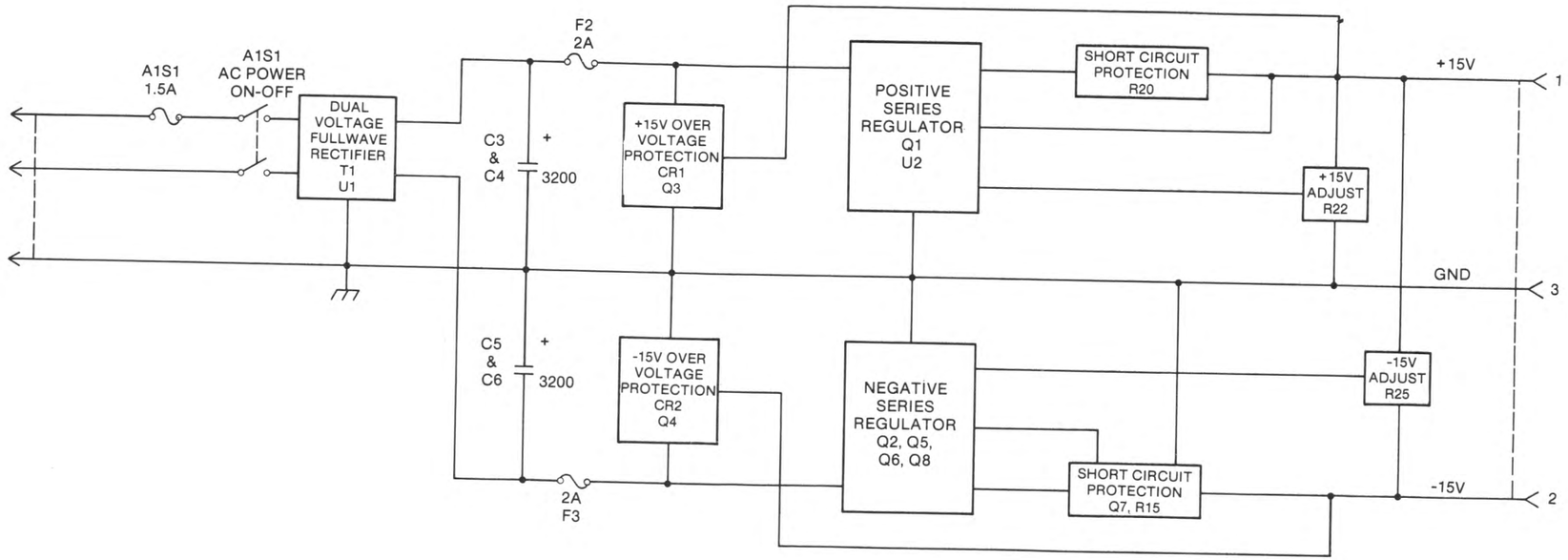


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Figure 4-2. Series 6600
AC Power Supply Block Diagram

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The +15V adjust circuit is referenced between +15V output and ground and is adjusted first in any adjustment procedure. The -15V adjust circuit is referenced between the +15V and -15V output lines and should be adjusted last since the -15V output will track (in magnitude) changes in the +15V output.

If the output lines are short circuited, the short-circuit protection circuits will cause the output currents to fold back to thermally safe short circuit levels. Since the -15V output tracks the +15V output, a short on the +15V output will also cause the -15V output to go to zero volts.

The output voltage level at each output is also monitored by an overvoltage protection circuit. In the event of a power supply malfunction which causes an output overvoltage condition (magnitude greater than 18 volts), the appropriate circuit will disconnect its regulator from the raw dc capacitor by causing its internal fuse to open. If this occurs on the +15V output and its output goes to zero, as a result of its regulator being disconnected, the -15V output will also go to zero volts.

NOTE

If both output adjust controls are set to maximum clockwise positions, the -15V output line will go to an overvoltage condition and its fuse will blow when the supply is turned on.

Maximum rated output current for each output voltage is 1.5A dc. Maximum ac ripple on the +15V and -15V outputs is less than 4 mV p-p and 8 mV p-p, respectively.

4.2.2 MODEL 6601 DOWNCONVERTER A2

Figures 4-3 and 4-4 show the block diagrams of the integrated and discrete versions of the Model 6601 downconverter, respectively.

The principal difference between the two versions is that in the integrated microwave converter the RF bandpass filter, mixer preamplifier, multiplier/filter, and IF bandpass filter have been integrated into one package.

The function of both microwave converters is to convert a particular channel of the 3.7-to 4.2-GHz band to 880 MHz. The channel converted is determined by the frequency of the local oscillator supplied to the microwave converter by the First LO. The required First LO frequency is given by the relation,

$$\text{First LO frequency} = \frac{\text{Channel center frequency (MHz)} - 880}{4},$$

which ranges from 710 to 825 MHz. The converted signal is also amplified a nominal 11 dB and band-limited by an 880-MHz bandpass filter.

The second converter converts the 880-MHz signal to the 70-MHz IF with an 810-MHz low side local oscillator. The nominal conversion gain of the second converter is 8 dB. The nominal overall conversion gain of the Model 6601 downconverter is 19 dB.

4.2.2.1 First Local Oscillator. Figure 4-5 shows the block diagram of the First Local Oscillator.

The first LO output is derived from a voltage-controlled oscillator (VCO), buffered by a 5-dB pad (R31, R32, and R33), The VCO (Q2, CR2, CR3, and associated components) is a varactor-tuned common-collector Clapp oscillator. The output of the VCO is fed to the output of the First LO via the pad and also to a divide-by-64 UHF prescaler, U3. A crystal-controlled, common-collector oscillator (Q1 and associated components) utilizes fundamental mode crystals in a parallel-resonant mode to provide a reference signal to the phase detector, U1. The reference oscillator frequency ranges from 11.09 to 12.89-MHz, depending on the channel crystal installed. The reference oscillator frequency is given by the relation,

$$\text{Reference frequency} = \frac{\text{Channel center frequency (MHz)} - 880}{256}$$

A second input to the phase detector is the output of the divide-by-64 UHF prescaler. The phase detector output differentially drives U2 and associated components, the active loop filter. The loop filter drives

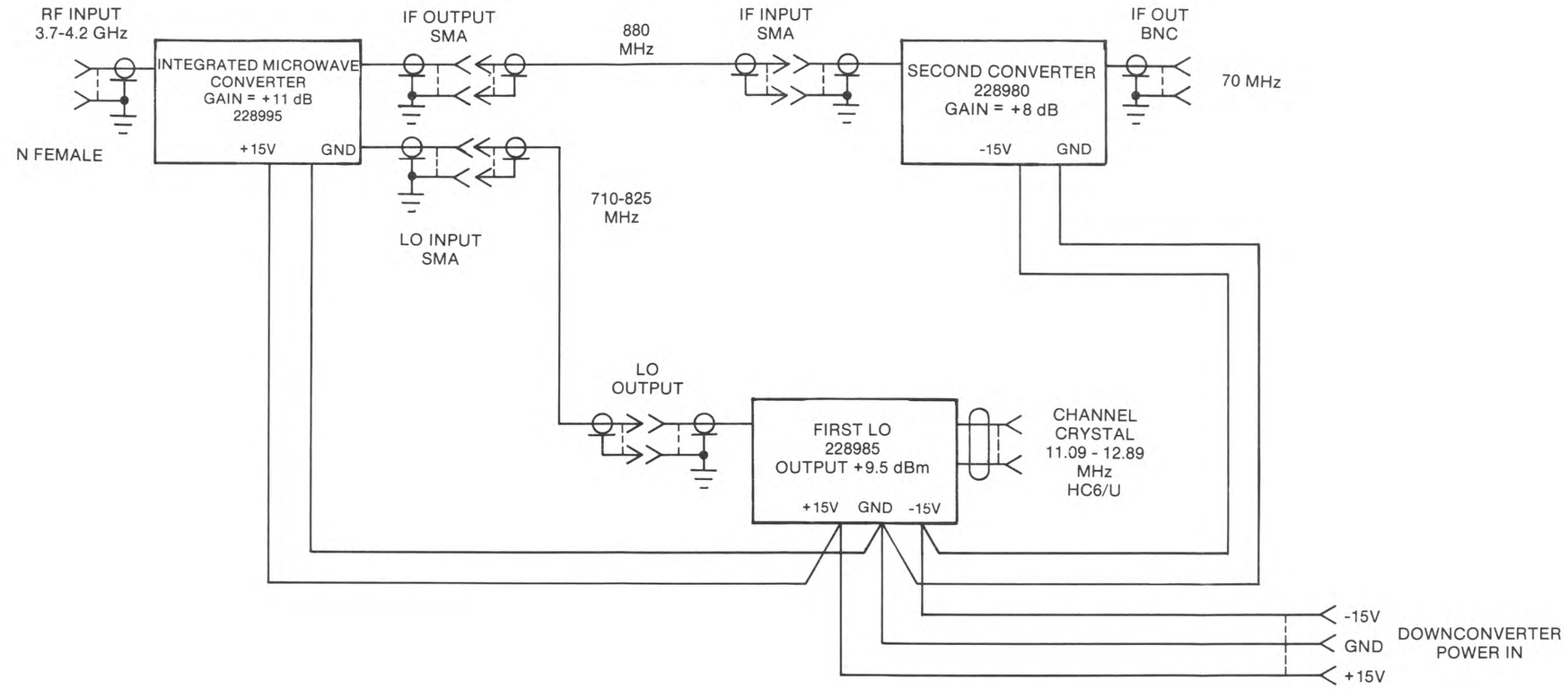

Figure 4-3. Model 6601 Integrated Downconverter Block Diagram

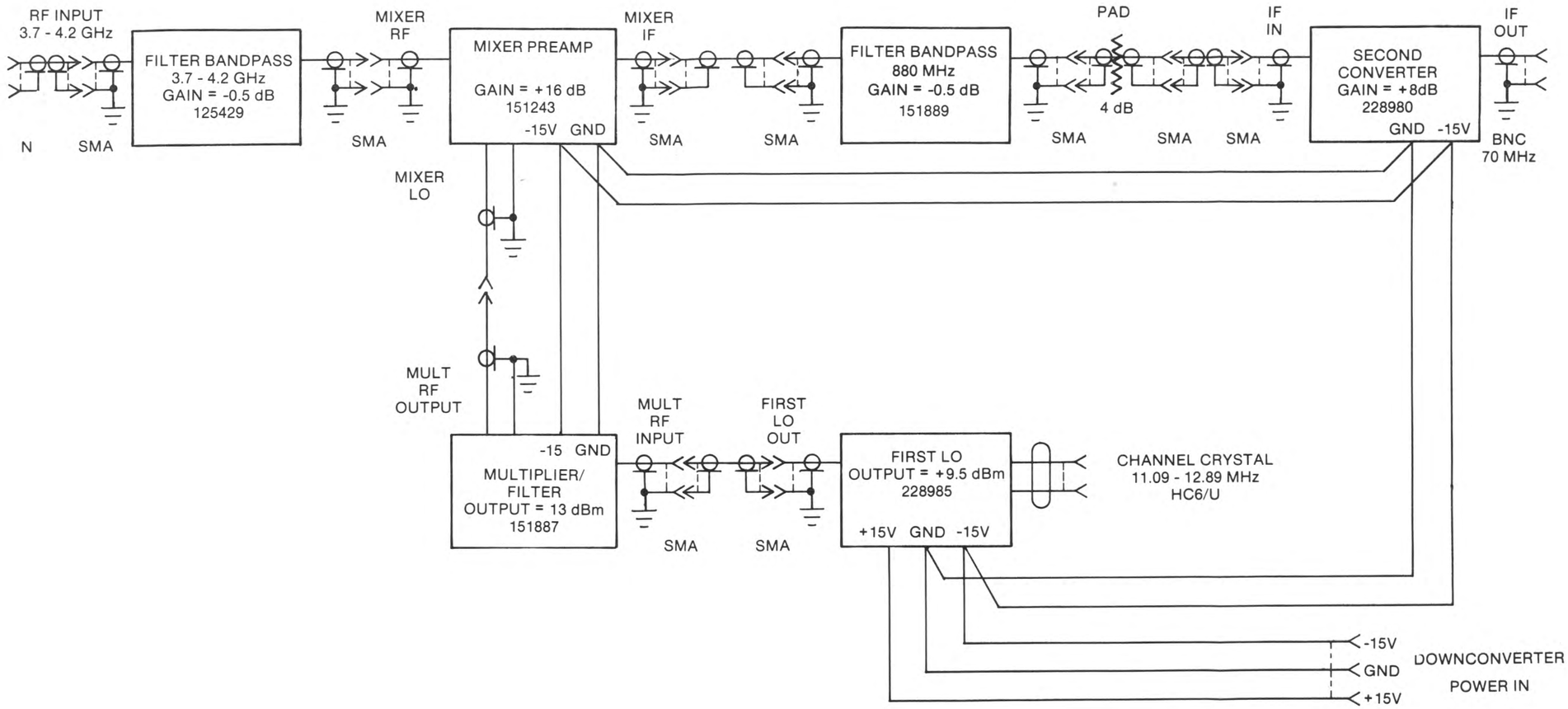

Figure 4-4. Model 6601 Discrete Downconverter Block Diagram

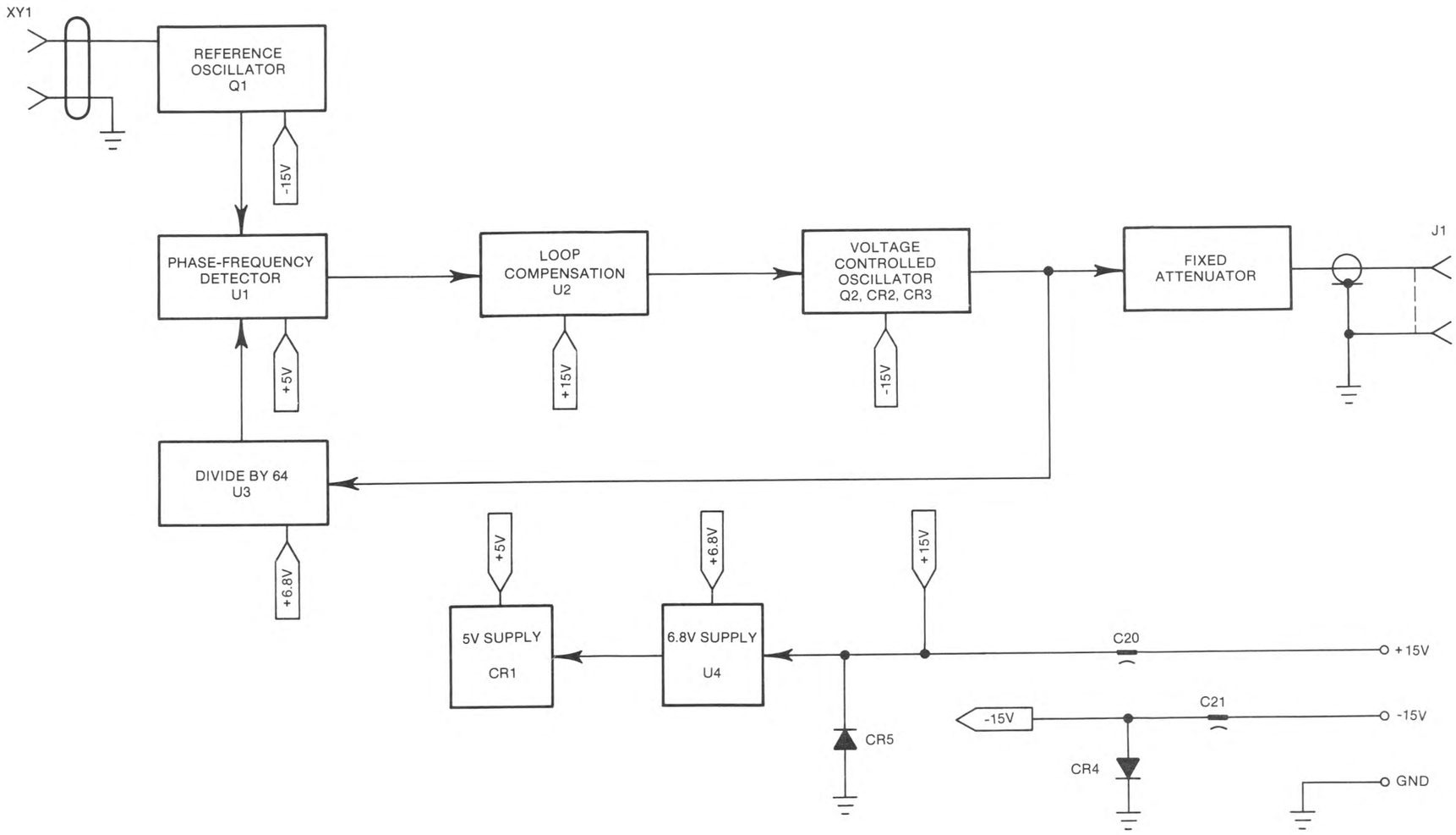

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Figure 4-5. Model 6601 First LO Block Diagram

the VCO varactors, thereby closing the loop which controls the VCO frequency. The +6.8V supply voltage required by the divide-by-64 UHF prescaler is provided by U4, an integrated circuit voltage regulator. The 5.0V supply voltage required by the phase detector is provided by zener diode CR1. The nominal output level of the First LO is 9.5 dBm.

4.2.2.2 Second Converter. Figure 4-6 shows the block diagram of the Series 6600 second converter.

The second converter provides frequency conversion from the 880-MHz IF to the 70-MHz IF. A low-side local oscillator at 810 MHz is derived from a 101.25-MHz crystal oscillator, Q3. The oscillator also serves as a X2 frequency multiplier. The 202.5-MHz signal is multiplied X2 to 405-MHz by Q2 and again X2 to 810 MHz by Q1. The 810-MHz local oscillator is filtered by a bandpass filter consisting of C3, C7, and associated components. The 880-MHz IF signal is converted to 70 MHz by a double-balanced mixer, A1. The 70-MHz signal is then low-passed filtered and impedance matched by L8 and C16 to a 17-dB IF amplifier, Q4 and Q5. The overall conversion gain, 880 MHz to 70 MHz, is nominally +8 dB.

4.2.2.3 Integrated Microwave Converter or Discrete Converter. The function of all versions of microwave converters is to convert a particular channel of the 3700- to 4200-MHz RF band to 880 MHz. Nominal conversion gain is +11 dB for all versions. Each includes a X4 frequency multiplier for the low side local oscillator. The required local oscillator input level is 9.5 ±1.5 dBm at a frequency given by the relation,

$$\text{Local oscillator frequency} = \frac{\text{Channel center frequency (MHz) -880}}{4}$$

The microwave converters are not field repairable and should be returned to Scientific-Atlanta for service.

4.2.3 MODEL 6602 DOWNCONVERTER A2

Figure 4-7 shows the block diagram of the Model 6602 agile downconverter. The version depicted has an integrated microwave converter. The microwave converter and second converter of the Model 6602 agile downconverter are identical to those used in the Model 6601 downconverter (refer to paragraphs 4.2.2.2 and 4.2.2.3 for description of these components).

The First LO in the Model 6601 downconverter is replaced by the Agile LO in the Model 6602 agile downconverter. An additional assembly, the Interface Logic Board, is used in the Model 6602 agile downconverter to provide control of the frequency select features of the agile downconverter.

4.2.3.1 Agile Local Oscillator. Figure 4-8 shows the block diagram of the Agile Local Oscillator (agile LO).

The agile LO output is derived from a voltage controlled oscillator (VCO) buffered by a fixed attenuator (R21, R22, and R23). The VCO (Q2, CR3, CR4, and associated components) is a varactor-tuned common-collector Clapp oscillator. The output of the VCO is fed to the output of the agile LO via the fixed attenuator and also to a divide-by-64 UHF prescaler, U8. The output of the prescaler drives a programmable divider chain (U5, U6, U7, and associated components). The programmable divide ratio ranges from 142 with the agile LO at 710 MHz to 165 at 825 MHz. Because a clock pulse is required to reset the divide chain, the divide ratio commanded to U5, U6, and U8 must be one less than the required programmable divide ratio. The most significant divider, U5, is preset to 100. The next significant divider, U6, has pin 5 wired "high" and pin 6 wired "low". Pin 5 controls the "4" bit. Integrated circuits U5 and U6, therefore, are preset to 140. Commanding U6, pin 3, high adds 10 (resulting in a divide ratio of 150); commanding U6, pin 4, high adds 20 (resulting in a divide ratio of 160). The least significant divider, U7, may be commanded to 0 through 9 by pins 3 through 6. Pin 3 controls the least significant digit (1) and pin 6 controls the most significant digit (8). The required programmable divide ratio command to E1 through E6 is given by the relation,

$$\text{Divide ratio command} = \frac{\text{Agile LO frequency -1.}}{5}$$

With the loop locked, the output frequency of the programmable divider chain is 78.125 kHz.

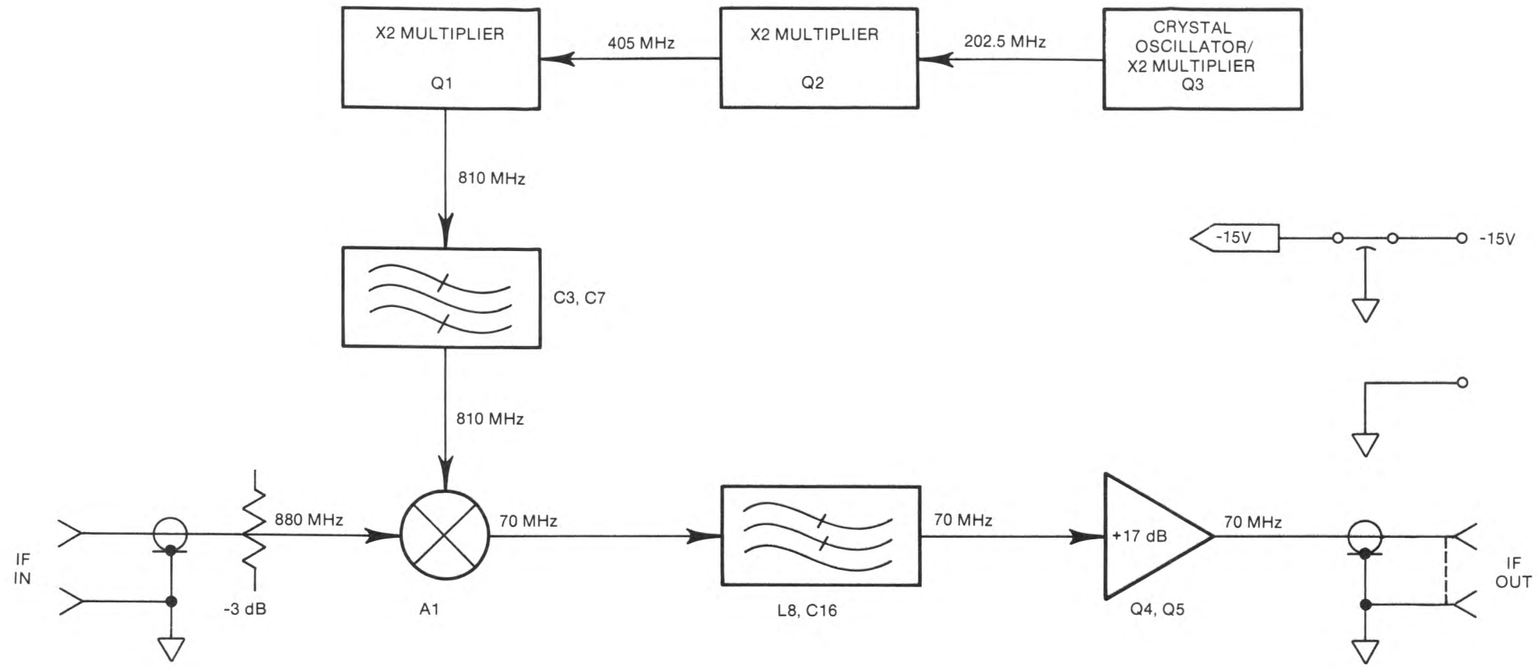

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Figure 4-6. Series 6600 Second Converter Block Diagram

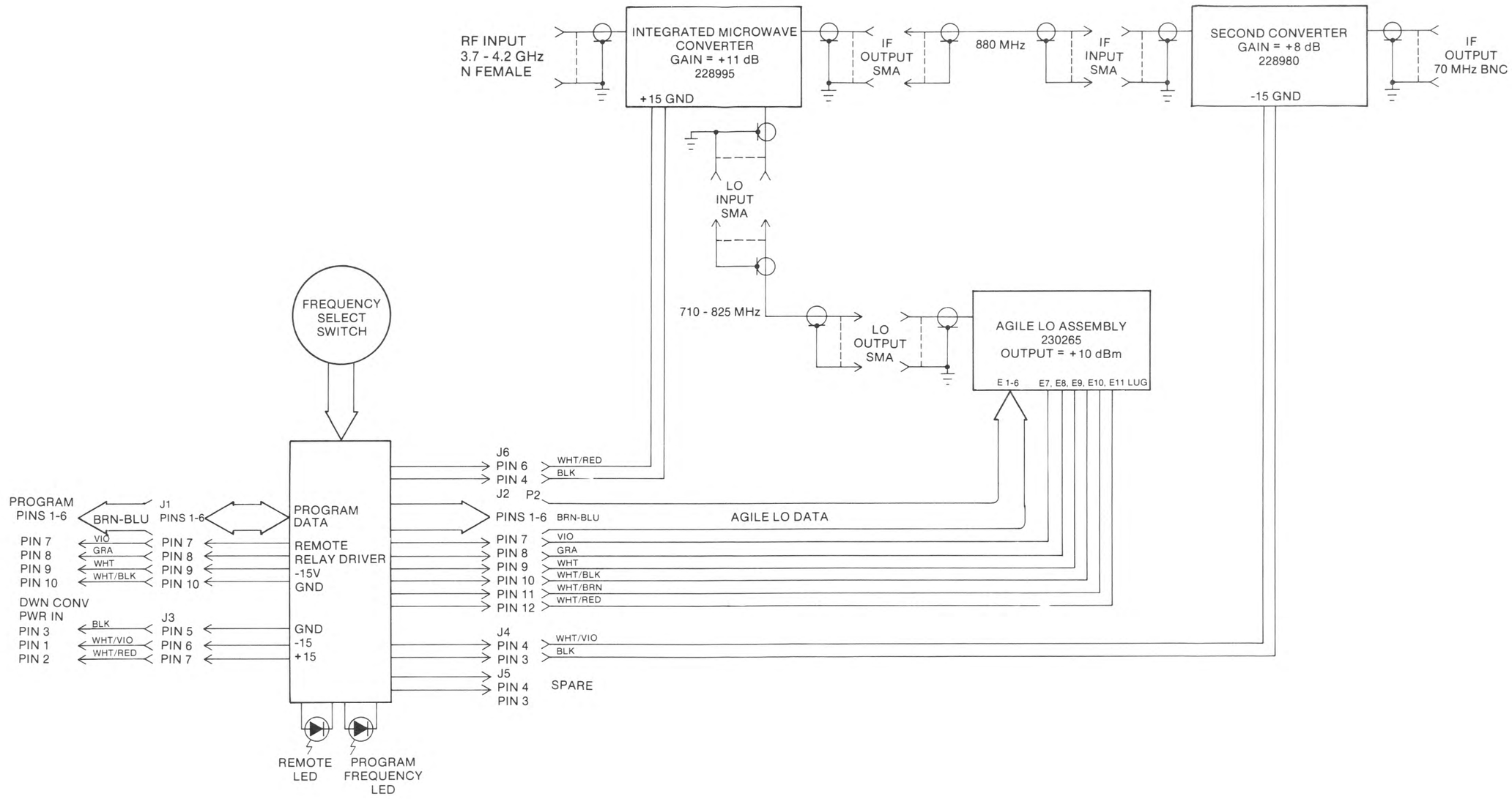

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Figure 4-7. Model 6602 Agile Downconverter Block Diagram

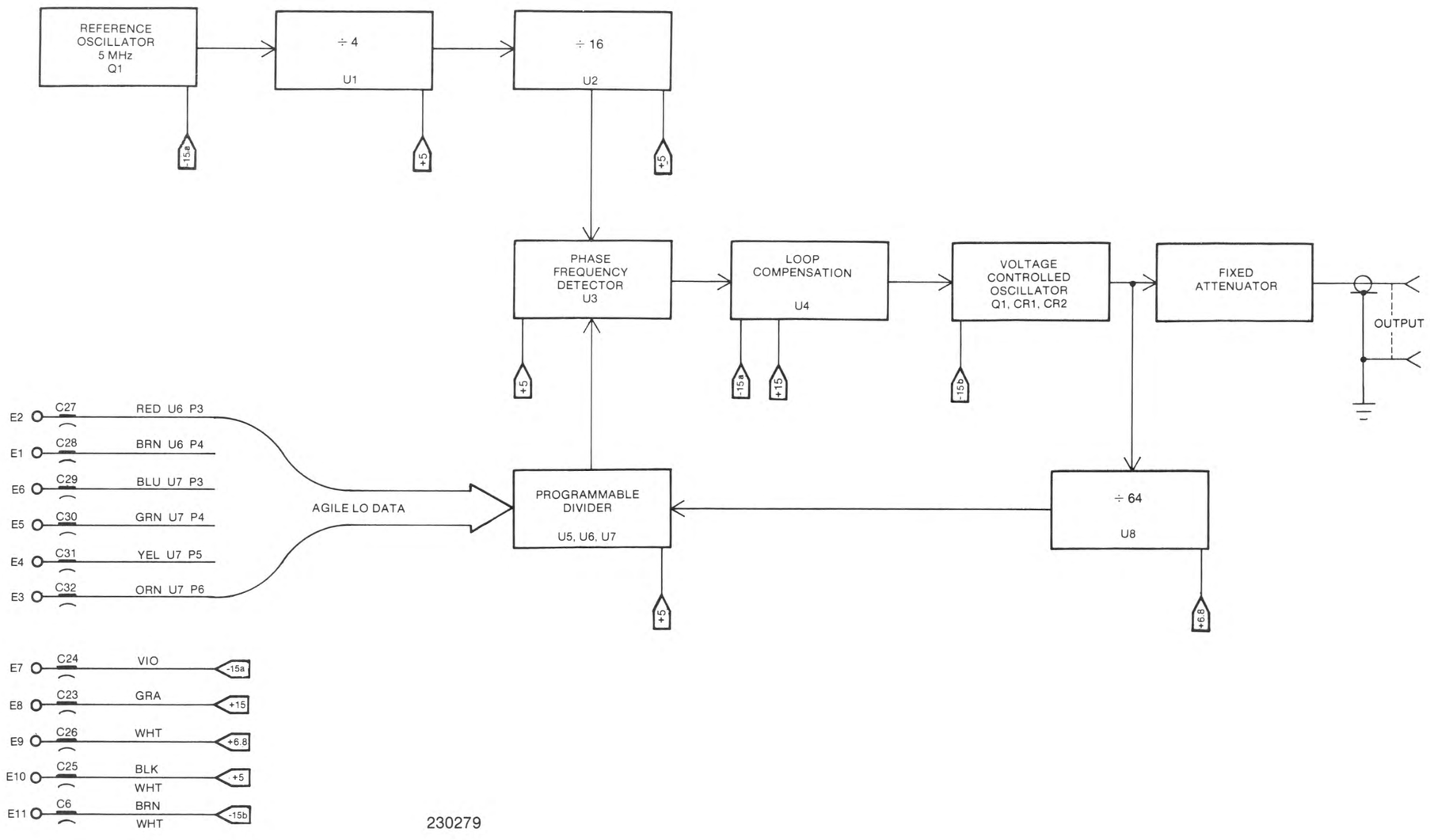


Figure 4-8. Model 6602 Agile LO Block Diagram

The programmable divider chain output drives the loop phase detector, U3. The loop reference oscillator (Q1 and associated components) is a 5-MHz crystal-controlled, common-collector Clapp oscillator. Capacitor C1 serves as a fine tune of the reference oscillator frequency. Integrated circuit U1 divides the oscillator frequency by four and drives U2 which further divides the frequency by sixteen. The output of U2 at 78.125 kHz is a second input to the loop phase detector. The differential output of the phase detector drives the active loop filter (U4 and associated components). A passive LC filter (L1, L3, C15, C16, C34, and C35) is incorporated for additional filtering of the reference sidebands. The output of the passive LC filter controls the VCO varactors, closing the loop which controls the agile LO. The +6.8V dc required by U8 (E9) and the +5.0V dc required by U3, U5, U6, and U7 (E10) are developed on the interface logic board. The nominal output level of the agile LO is +9.5 dBm.

4.2.3.2 Interface Logic Board. Figure 4-9 shows the block diagram of the Interface Logic Board.

The primary function of the interface logic board is to provide the correct six-bit code to command the agile LO to the desired frequency. The agile LO code command required is described in paragraph 4.2.3.1. The agile LO code generated by the interface logic board is present on connector J2, pins 1 to 6, of the board. Pin 1 is the most significant bit (20), pin 2 is (10), pin 3 is (8), pin 4 is (4), pin 5 is (2), and pin 6 is the least significant bit (1).

With pin 7 of the Model 6602 agile downconverter PROGRAM connector at logic high (or floating with no connection), the agile LO code is selected by the front panel FREQUENCY SELECT switch. In this case, data selector integrated circuits U4 and U5 are commanded by U6D to select data from the FREQUENCY SELECT switch. This 24-position switch is rotary encoded directly with the required agile LO code. In this mode, transistor Q1 is turned off, and the yellow REMOTE indicating LED is extinguished.

When pin 7 of the PROGRAM connector is at logic low (or grounded to pin 10 of the PROGRAM connector), the data select integrated circuits U4 and U5 select data from the code converter U1, U2, and U3. The input to the code converter is from the program matrix diode array. Refer to paragraph 3.6 concerning the features and required codes for using the Model 6602 agile downconverter in the remote mode. When the receiver is in this mode, Q1 is saturated, illuminating the yellow REMOTE LED indicator.

Integrated circuits U6A, U6B, U6C, U7A, U7B, U7D, and U8 decode the condition that all six bits of both data inputs to data selector are identical. In this condition, Q2 is saturated, illuminating the green REMOTE FREQUENCY LED indicator. This indicates that the frequency being remotely programmed to the receiver is identical to the frequency indicated by the FREQUENCY SELECT switch. Integrated circuits U7C and U8 ensure that the REMOTE FREQUENCY LED indicator is extinguished if the receiver is not remotely programmed.

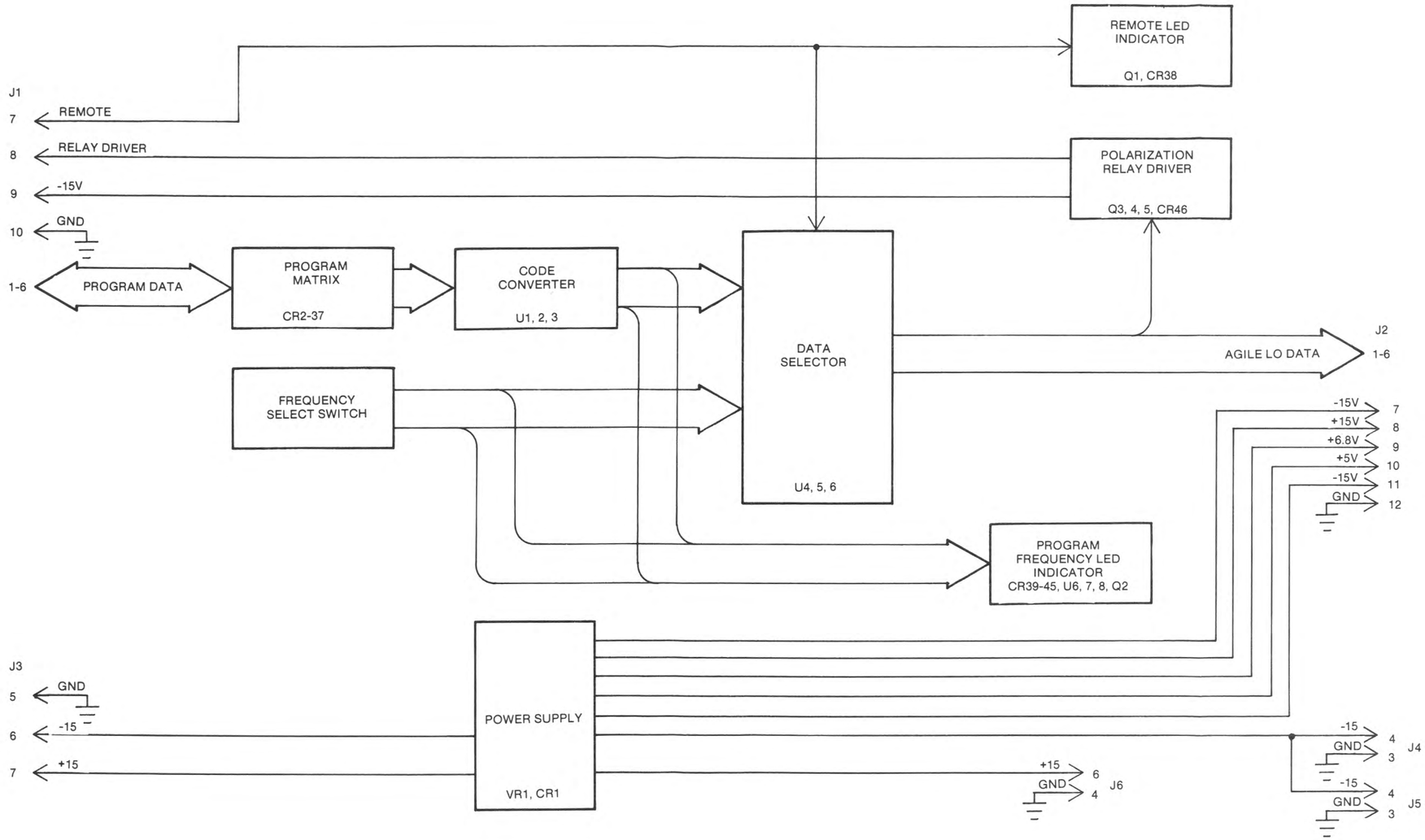
When the agile downconverter is tuned to the first transponder frequency, 3720 MHz, the agile LO code command is 141. The least significant bit of this code is a logic high (U4, pin 10) and transistors Q3 and Q4, therefore, are saturated. Resistor R35 is then pulled negative, turning off transistor Q5. This condition is met for all odd-numbered transponders (refer to table 3-1). The transistor is saturated for even-numbered transponders.

The +6.8V dc and +5.0V dc supplies for the agile LO are located on the interface logic board. The code command and all supplies required by the agile LO are provided on connector J2 of the interface logic board. Connector J3 is the +15V dc supply input to the interface logic board. Connectors J4 and J5 provide -15V dc to the second converter and discrete microwave converter components. Connector J6 provides +15V dc when an integrated microwave converter is used.

4.2.3.3 Second Converter. The Model 6602 second converter is identical to the Model 6601 second converter (refer to paragraph 4.2.2.2 for the block diagram discussion).

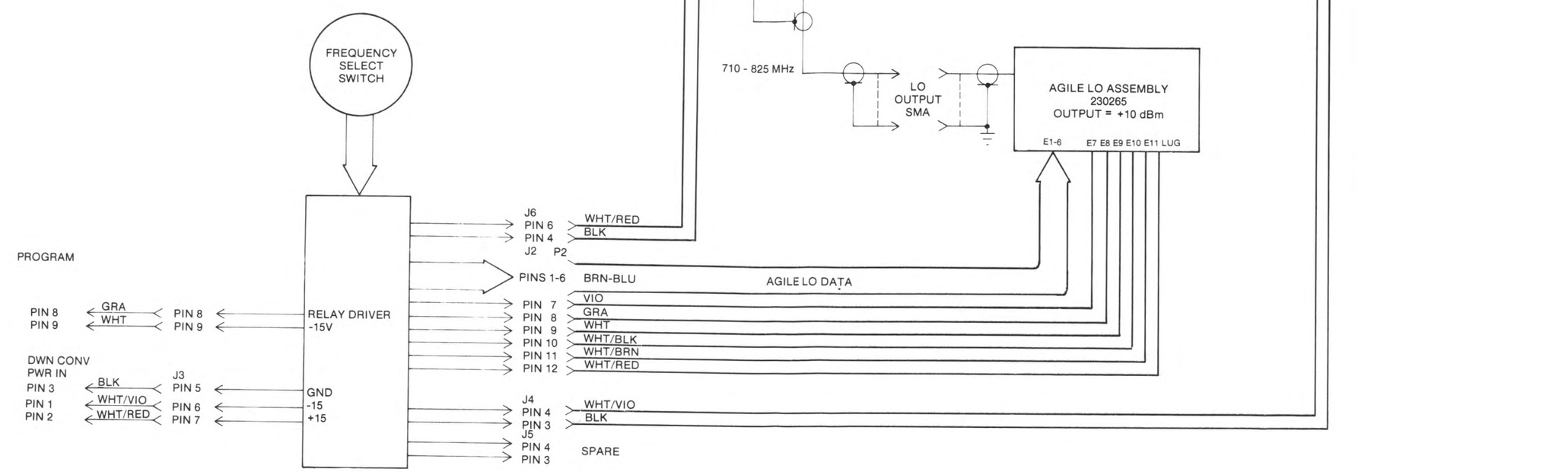
4.2.4 MODULE 6603 DOWNCONVERTER A2

Figure 4-10 shows the block diagram of the Model 6603 downconverter. The microwave converter, second converter, and agile local oscillator are identical to those used in the Model 6602 downconverter



230274

Figure 4-9. Model 6602 Interface Logic Board Block Diagram



231633

Figure 4-10. Model 6603 Downconverter Block Diagram

(refer to paragraphs 4.2.2.2, 4.2.2.3, and 4.2.3.1 for description of these components).

The interface logic PWB of the Model 6602 downconverter is replaced by the interface PWB in the Model 6603 downconverter.

Figure 4-11 shows the block diagram of the Interface Board. The interface board connects the channel selection rotary-encoded switch of the front panel to the agile LO. It also contains a power supply which converts +15V dc to +6.8V dc and +5.0V used by the agile LO. The code command and all supplies required by the agile LO are provided on connector J2 of the interface board. Connector J3 is the ±15V dc supply input to the interface board. Connectors J4 and J5 provide -15V dc to the second converter and discrete microwave converter components. Connector J6 provides +15V dc when an integrated microwave converter is used.

The interface board also contains an auto polarization relay driver identical to the driver on the interface logic board of the Model 6602 downconverter (refer to paragraph six of section 4.2.3.2 for a description of the driver circuit).

4.2.5 IF AMPLIFIER

Figure 4-12 is the block diagram of the IF amplifier printed-wiring board. The 70-MHz IF signal from the downconverter enters the card at fingers 13, 14, and 15 of card edge plug A5P2. The front-end part of the amplifier consists of a PIN diode attenuator section, delay equalizer section, and another PIN diode attenuator section, isolated from the input and each other by three active broadband IF amplifier stages.

An AGC dynamic range of greater than 40 dB is provided by the attenuator sections. Constant dc reference control current to the attenuator sections is furnished by an attenuator current source. The attenuator driver and attenuator shaping network provides the means to control the potentiometer.

When in the AGC mode, the input control signal to the attenuator shaping network is generated by the AGC level detector and AGC loop filter. When in the MGC mode, the control signal is provided by the manual level control. In either case, the control signal is also routed out through a unity gain inverting C/N signal noise buffer, to C/N outputs at fingers 10, 11, and 12 of plug A5P1. Offset voltage control of these outputs is provided by the inputs to the buffer from the ZERO ON NOISE control. Both AGC and ZERO ON NOISE controls and AGC/MGC SELECT switch are located on the IF amplifier card and are accessible through the front panel of the video receiver.

The delay equalizer section compensates for the non-flat group delay produced by the bandpass filter portion of the IF amplifier card. The bandpass filter consists of five two-pole tuned circuits, isolated by six active broadband IF amplifier stages. The unique IF bandpass filter, a Scientific-Atlanta proprietary design, has amplitude and group delay responses that are arithmetically symmetrical about the 70-MHz center frequency.

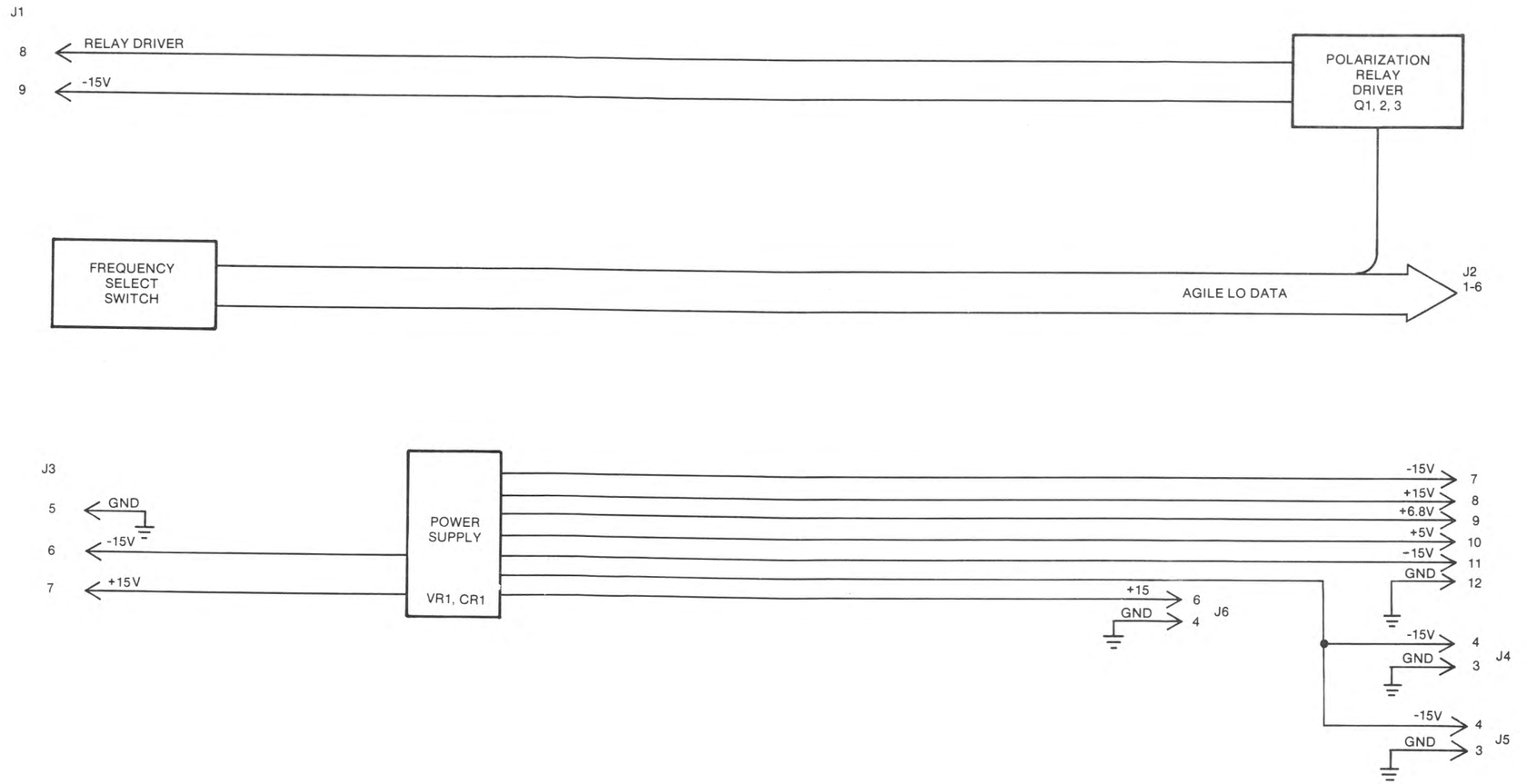
The constant level (-5 dBm), filtered, 70-MHz output signal is routed from the card through fingers 13, 14, and 15 of plug A5P1 for connection to the video demodulator card. Video receiver front panel IF MONITOR output signal is provided by an IF buffer amplifier connected to fingers 1, 2, and 3 of plug A5P1.

4.2.6 VIDEO DEMODULATOR A6

Figure 4-13 shows the block diagram of the video demodulator board.

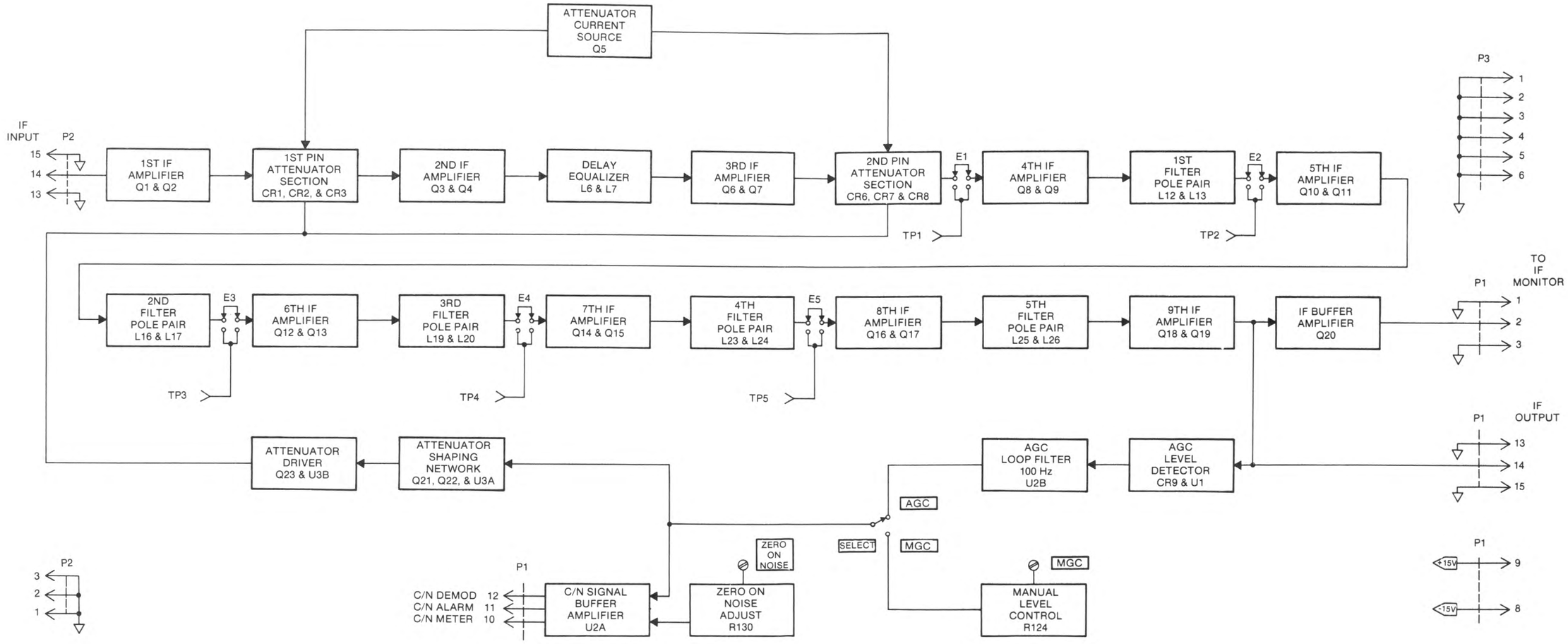
The video demodulator board is designed to accept a 70-MHz IF signal with a bandwidth of 30 MHz and a level of -5 dBm. Baseband information is retrieved and de-emphasized. Outputs are provided for video clamping. The IF enters P2-14 and is amplified by a feedback amplifier, consisting of transistors Q1 and Q2. The amplified signal is limited by integrated circuits U2A and U2B. A low-pass filter removes harmonics of third order and higher. A buffer amplifier isolates the low-pass filter and linearity network. Linearity adjustment is achieved by a tuned network whose natural frequency usually falls near the center IF frequency. Another amplifier brings the signal level up to the proper level to interface with the discriminator Q8 and Q9. Buffer amplifiers follow which isolate the discriminator from the first stage of video amplification provided by transistors Q12 through Q14. De-emphasis is provided by a network consisting of R88, R89, and C53. A second stage of video amplification brings the nominal video level to 1-volt peak-to-peak.

A C/N sense amplifier U1 drives two diode switches which close a threshold extension loop around limiter U2A and U2B. When the C/N ratio reaches a



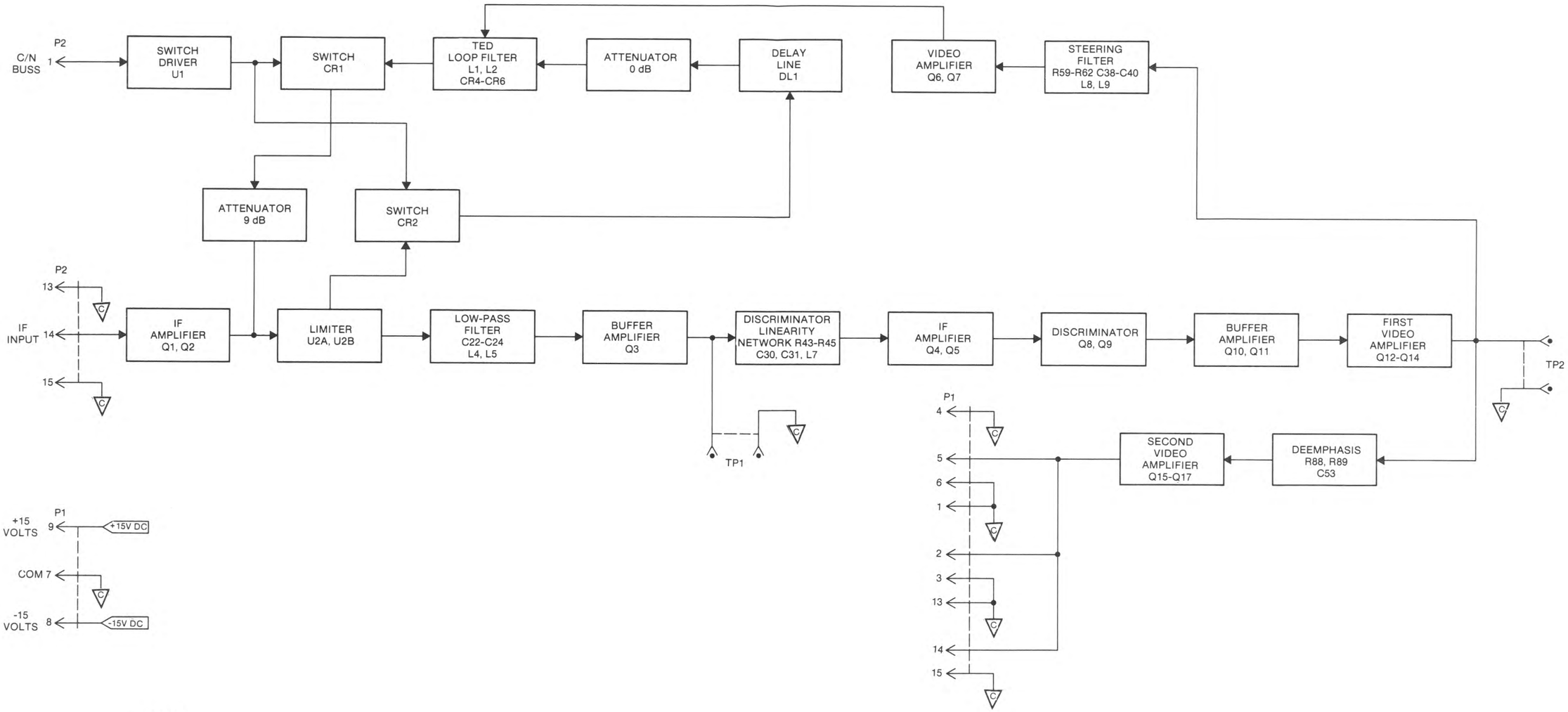
231626

Figure 4-11. Model 6603 Interface Board Block Diagram



229034

Figure 4-12. Series 6600 IF Amplifier Block Diagram



229039

Figure 4-13. Series 6600 Video Demodulator Block Diagram

preset level, threshold extension is provided by the threshold extension demodulation (TED) loop filter L1, L2, and CR4 through CR6. A steering loop whose input is from the output of the first video amplifier is part of the overall threshold extension loop. C/N ratios at which threshold occurs is typically improved 1.5 dB by threshold extension.

4.2.7 VIDEO CLAMP A7

Figure 4-14 shows the block diagram of the video clamp board.

The signal into the video clamp module is the output of the video demodulator printed-wiring board. The signal at this point includes the video, the dispersal waveform, and all subcarriers. This signal is supplied through an isolation amplifier to a sync separator circuit which extracts the video sync, and to a phase-equalized lowpass filter. The signal supplied through the lowpass filter has all subcarriers removed as well as having noise above 5 MHz removed. The signal is supplied from the lowpass filter to a summing junction located at the input of a video amplifier. The output of the video amplifier is the video signal supplied to the rear of the receiver. A sample and hold circuit monitors the voltage on the video output during sync tip times. It is controlled by the sync separator which places the circuit in the sample mode during sync tips. An integrator following the sample and hold circuit supplies a signal to the inverting input of the video amplifier. This signal is such that the dispersal waveform present on the input video signal is removed from the output. A bandpass filter centered on 15.75 kHz is also located at the output of the video amplifier. A bandpass filter selects the fundamental component of the sync signal on the output and supplies it to an active rectifier and filter circuit which then provides the alarm output from the board. The alarm output is an analog voltage which is -1V or more negative with a video signal present, and which drops to 0V if the video signal is removed.

The purpose of the bandpass filter preceding the rectifier is to largely eliminate the effects of broadband noise should the video signal be lost and replaced by broadband noise.

4.2.8 AUDIO DEMODULATOR

Figure 4-15 shows the block diagram of the audio demodulator board. The following discussion is applicable to all versions of the audio demodulator board except as noted below.

An input signal consisting of the video and subcarriers supplied from the video demodulator circuitry is applied to the audio demodulator through a buffer amplifier. A bandpass filter following the buffer amplifier selects the one subcarrier which is to be demodulated by this demodulator. A filter test point is located at the output of the bandpass filter which is used during initial alignment of the filter. After the bandpass filter, the subcarrier is supplied to a limiter and to a discriminator.

A detector test point on the output of the discriminator contains the non-band limited output of the discriminator and is used both during the initial factory alignment and is available for use in the field in conjunction with possible future cue channel demodulators. The detector test point is interconnected from the program audio slot in the Series 6600 video receiver chassis to the auxiliary slots to permit the addition of a cue channel demodulator should one ever be required.

Following the detector test point, the audio signal is supplied to a low-pass roofing filter with a cutoff frequency above 15 kHz. Its purpose is to eliminate any high-frequency noise coming out of the discriminator, thus improving measured signal-to-noise ratio and reducing any undesirable effects of supersonic noise on the following equipment. From the roofing filter the audio signal is applied to the output level adjustment potentiometer. In the case of a program audio demodulator, this potentiometer is located behind the receiver front panel. In the case of other demodulators, the potentiometer is located on the printed-wiring board.

Following the output level potentiometer is an output amplifier with the de-emphasis required placed in its feedback path. In some cases, the de-emphasis capacitor will be removed if system parameters so dictate. For example, in the 6.2-MHz subcarrier demodulator currently being supplied for slow-scan video, the de-emphasis capacitor is removed. This power amplifier provides through build-out resistors on one side of the audio output. The other side of the audio output is derived by inverting the output of the above amplifier in a second power amplifier having a gain of minus one.

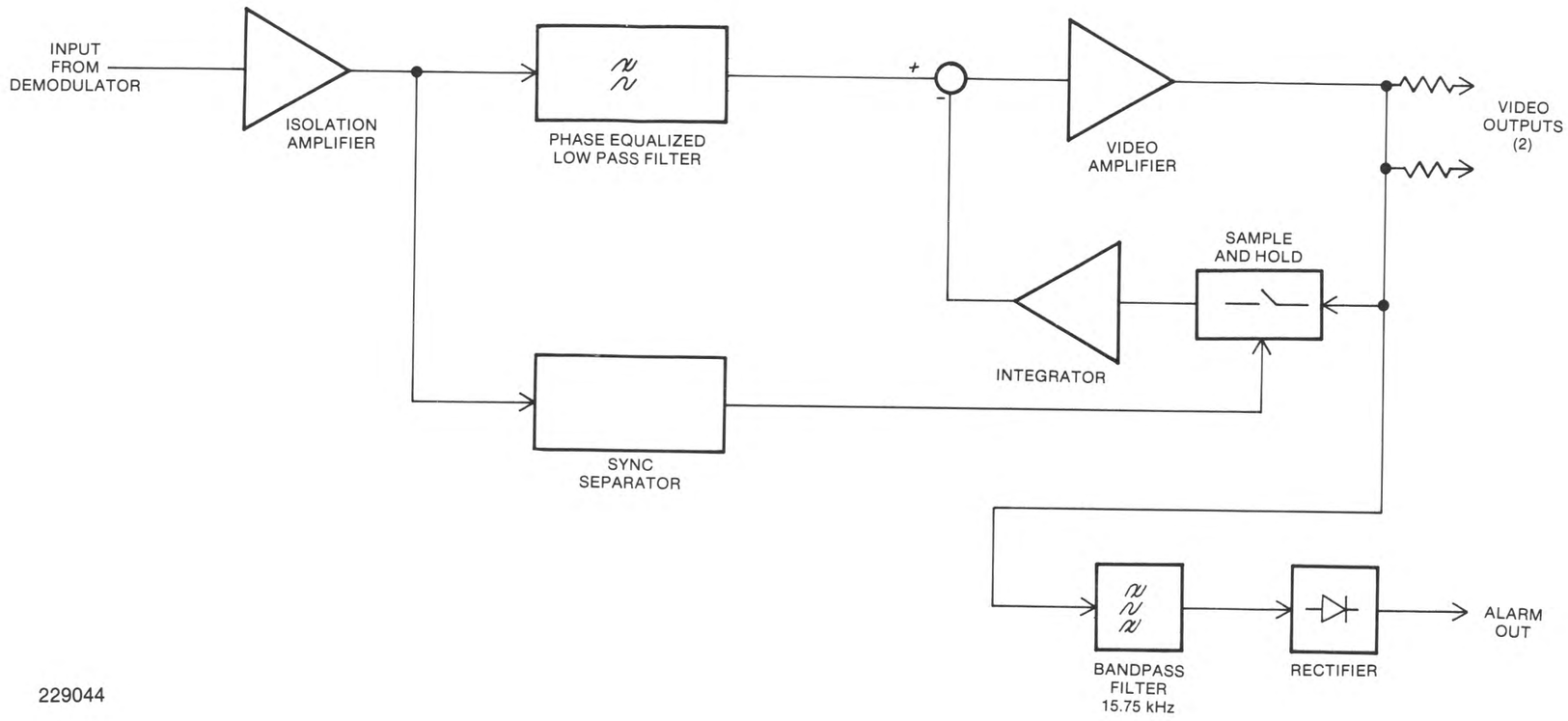


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Figure 4-14. Series 6600 Video Clamp Block Diagram

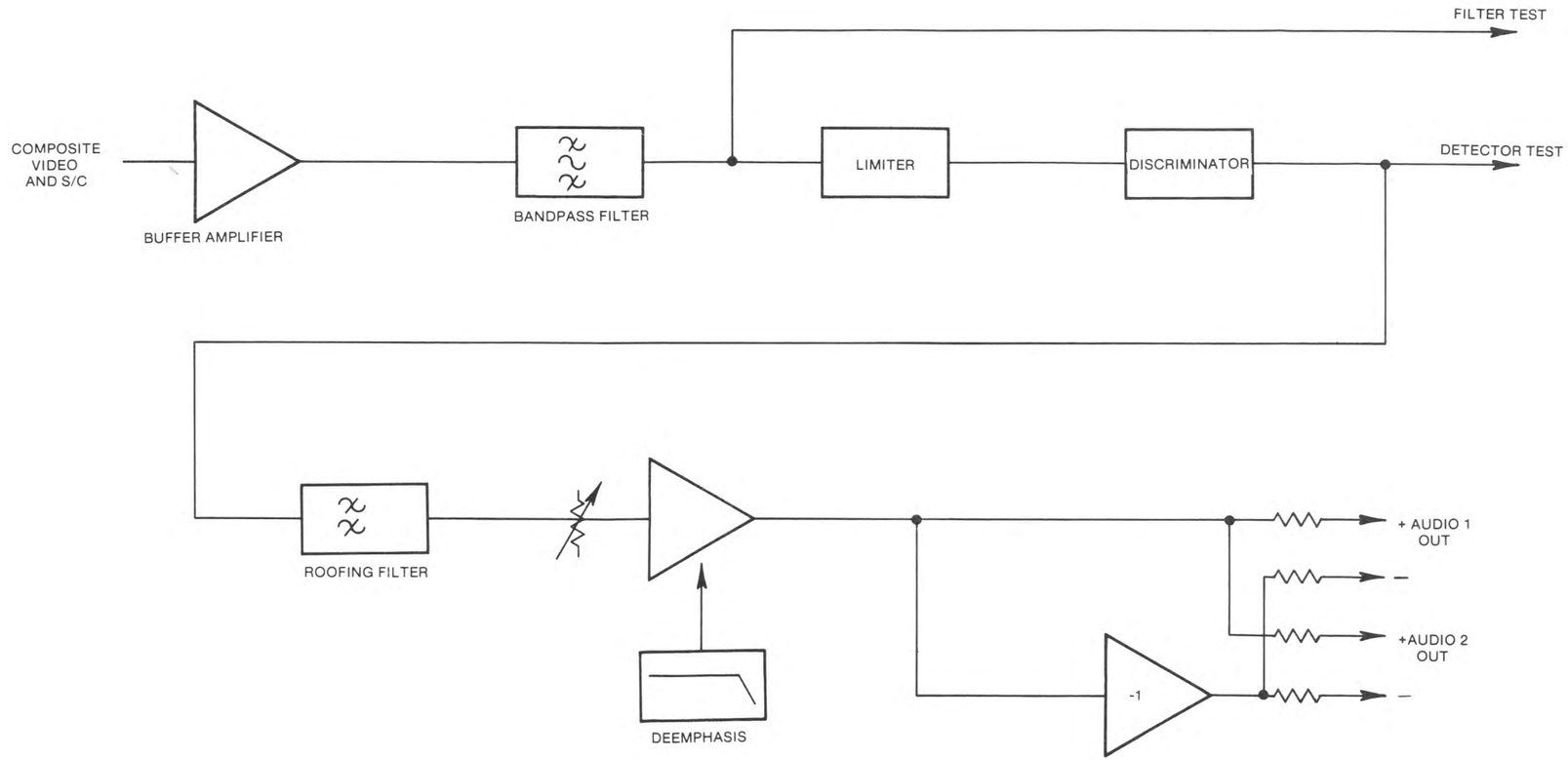

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Figure 4-15. Series 6600 Demodulator Block Diagram

4.2.9 4.5-MHz SUBCARRIER MODULATOR

Figure 4-16 shows the block diagram of 4.5-MHz subcarrier modulator.

Audio from the program audio printed-wiring board is supplied to the modulator on pin P2-11. Audio is taken from the program audio circuit after the roofing filter but before the de-emphasis, consequently the original pre-emphasis is still with the signal. Audio is supplied from the wiper of the front panel program level control potentiometer so that the deviation of the 4.5-MHz subcarrier modulator may be controlled at the same time the baseband audio output is adjusted.

AUDIO IN is supplied through preamplifier U1A to the deviation control potentiometer located at the top right of the printed-wiring board (when viewed from the front of the receiver). This potentiometer (R5) is one of the two accessible when the top panel of the receiver is removed. The DEVIATION potentiometer allows for the setting of the deviation applied to the subcarrier modulator separately from the baseband audio level being supplied to the rear of the receiver. Following the DEVIATION potentiometer, the signal is applied to amplifier U2B. The optional modulation limiter may be plugged into this printed-wiring board in the feedback path around U2B. The modulation limiter module monitors the output from U2B. If the output exceeds a preset threshold, the modulation limiter provides additional feedback around his stage to reduce the audio level being supplied to the following circuitry.

Following U2B the audio is split into two paths. One path is supplied to a threshold detector circuit U2. This circuit is used to illuminate an LED indicator when the deviation exceeds 25 kHz peak. This is used to initially set the deviation of the subcarrier modulator. The signal is also supplied through deviation sensitivity potentiometer R12 to a voltage controlled oscillator consisting of transistors Q2 and Q3. The DEVIATION control is not accessible when the module is plugged into the receiver. It is a factory adjustment that causes the deviation of the voltage controlled oscillator to be 25 kHz when the OVERDEVIATION indicator is first illuminated. Output from the voltage controlled oscillator is buffered by transistor Q4 and is applied to two different circuits. The first of these circuits is a voltage controlled amplifier U7 whose gain is controlled by the OUTPUT potentiometer, R50. The signal from U7 is applied through a high resistance to connector P1-7. Thus, on P1-7 exists a 4.5-MHz modulated subcarrier at a high impedance level. This signal is combined with the signal from VIDEO OUTPUT 2 from the video clamp board to provide for addition of the 4.5-MHz audio subcarrier to the output on VIDEO OUTPUT 2 from the receiver. VIDEO OUTPUT 1 is not affected by the addition of the subcarrier modulator.

The other output from buffer amplifier Q4 is supplied to frequency divider U3. The output from frequency divider U3 is supplied to phase detector U4 along with the output of another frequency divider, U5. The input to frequency divider U5 is from crystal oscillator U6. The two frequency dividers divide by suitable integers such that the two inputs to the phase detector U4 are at the same frequency when the voltage controlled oscillator is running at 4.5 MHz. The phase detector detects any frequency or phase error and feeds back a signal to the voltage controlled oscillator to correct its center frequency.

4.2.10 -24V POWER SUPPLY

Figure 4-17 shows the block diagram of the -24 volt dc power supply.

The -24 volt dc power supply (Assembly Number 229840) for the Series 6600 Video Receiver, accepts as an input a negative dc potential ranging from 19 to 32 volts and converts it to plus and minus 15 volts dc. This is done by chopping the input at approximately 45 kHz, rectifying it, and then filtering for a smooth dc level. Regulation of the 15-volt output is controlled by varying the pulse width of the chopped waveform. Due to the variety of possible loads placed on the supply by different models of the 6600 series, separate regulation circuitry is required for the two outputs. As a result, the polarities come from virtually separate supplies. The chopping frequency is generated by the positive supply and shared by the negative supply. Otherwise, the two supplies are independent.

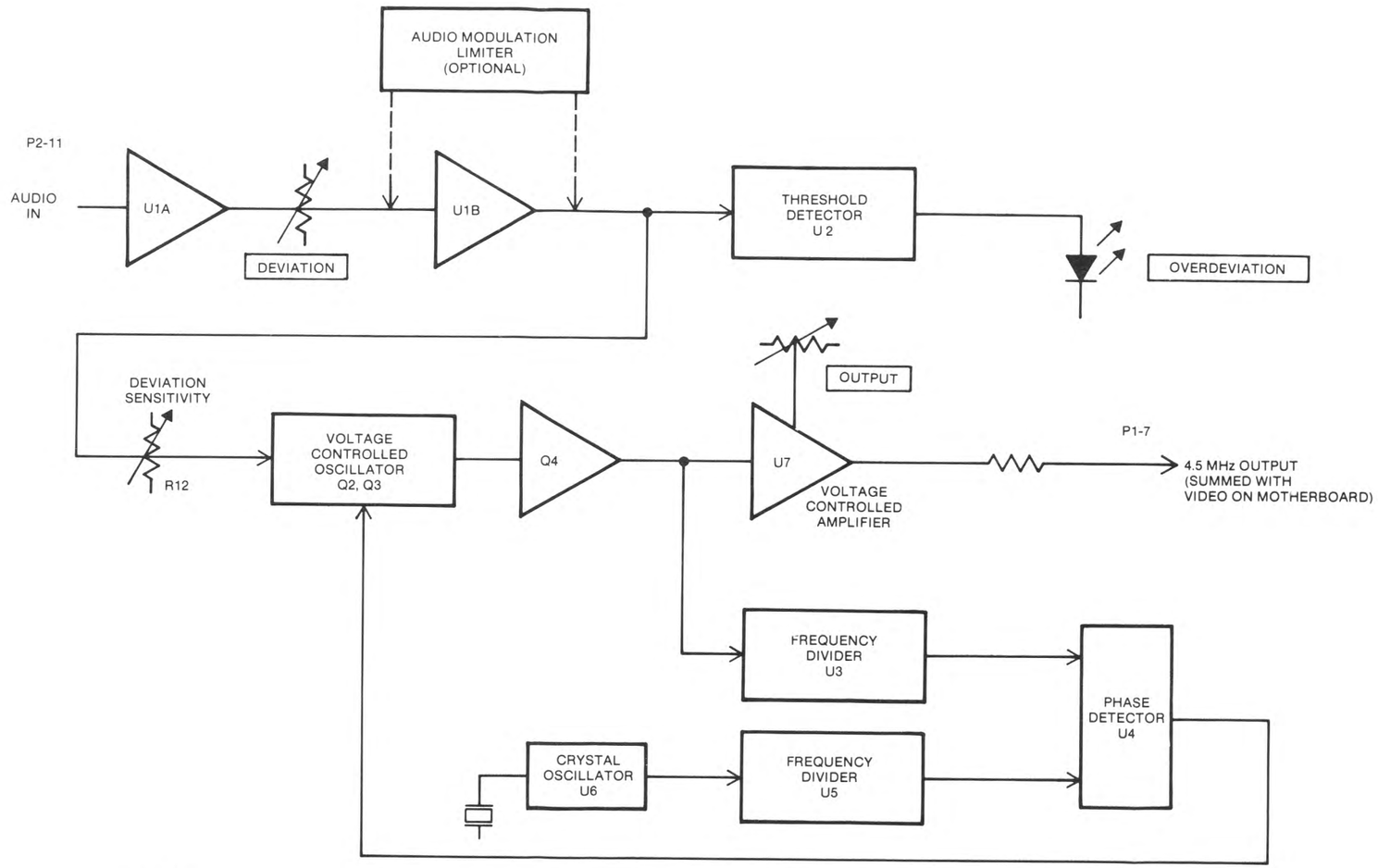

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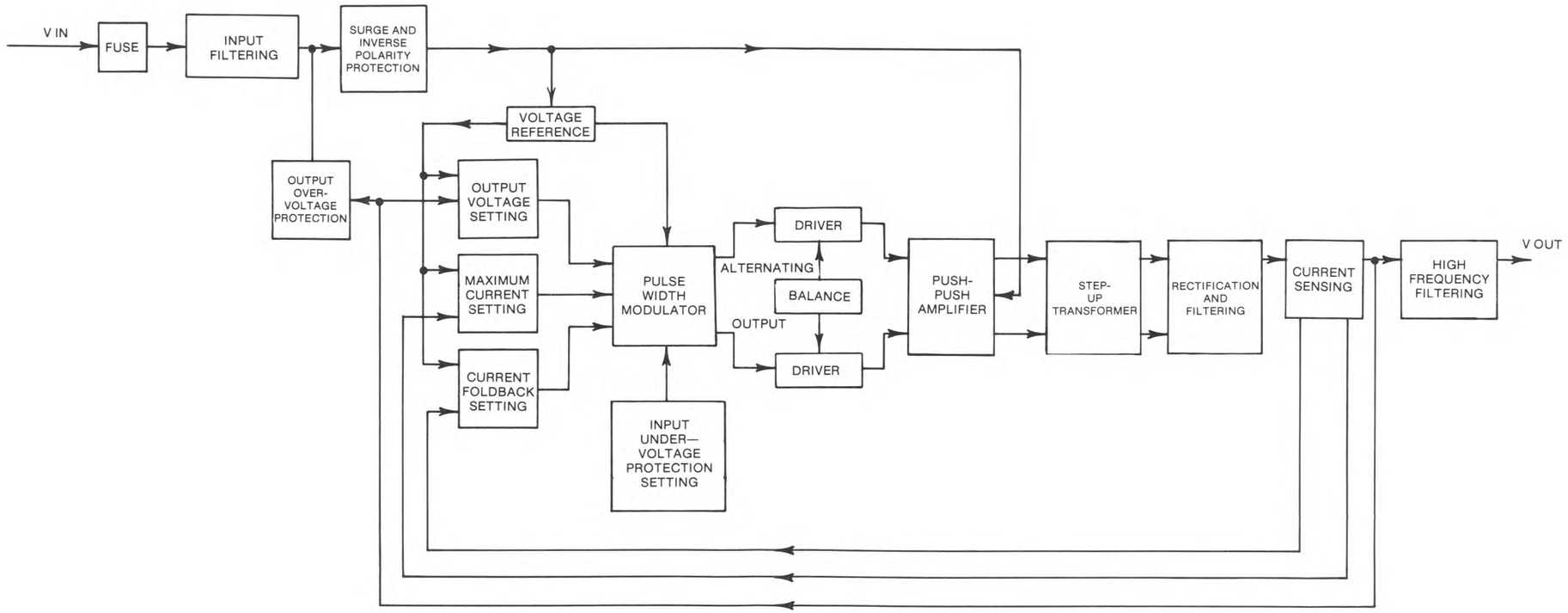
Figure 4-16. 4.5-MHz Subcarrier Modulator Block Diagram



NOTE:

1. PLUS AND MINUS SUPPLIES SIMILAR IN CONCEPT.

229847

Figure 4-17. Series 6600, -24V dc Power Supply Block Diagram

4.3 MODULE DETAIL DISCUSSION

Paragraphs 4.3.1 through 4.3.12 provide a more detailed discussion of all modules or boards of the Series 6600 video receivers than was covered in the block diagram level of paragraphs 4.2.1 through 4.2.10. The schematic diagram of the module or board is referenced in the following paragraphs and should be referred to when reading the appropriate paragraph.

4.3.1 AC POWER SUPPLY A1

Figure 7-2 is the schematic diagram to which the following detail circuit description is referenced. Refer to the block diagram discussion in paragraph 4.2.1 for the overview, information on inputs, outputs, and circuit interconnections and interactions.

Transformer T1 is provided with a single primary winding with a low voltage input tap and center tap secondary winding. Normal 50 or 60 Hz input voltage between primary terminals 1 and 3 is 115 ±15V rms and between terminals 2 and 3 (low voltage operation) is 100 ±13V rms. The full secondary has a 40V rms center tap, 3A rms rating.

The transformer secondary and the rectifier assembly U1 are connected so as to form two (positive and negative) single-phase, full-wave, center tap rectifier circuits. Unregulated (raw dc) voltage developed at the positive pin of the rectifier assembly is applied across filter capacitors C3 and C4, and the voltage from the negative pin is applied across filter capacitors C5 and C6.

Each filter capacitor consists of two 1600 μF aluminum electrolytic capacitors in parallel for a total of 3200 μF for each filter capacitor. Under a full 1.5-ampere load (each supply) and 115V rms input, the typical magnitude of raw dc voltage and ac ripple across each filter capacitor is 25.2V dc and 2.7V p-p, respectively. Typical raw dc voltage for no-load at 115V rms input is 29.2V dc. Typical raw dc voltage for full load at 100V rms input (primary terminals 1 and 3) is 21.4V dc.

The unregulated voltage across each filter capacitor is coupled through 2A overvoltage protection fuses F2 or F3 to the regulator circuits. If for any reason either regulated output exceeds a magnitude of 18 volts, the zener diode CR1 or CR2 will conduct and trigger triac Q3 or Q4 which then blows its fuse and thus disconnects its regulator.

The positive regulator consists of linear IC voltage regulator U2 driving series-pass transistor (emitter follower) Q1. The regulated output on the emitter of Q1 is supplied through current-sensing resistor R20 to pin 1 of the output connector J1. Divider network R21, R22, and R23 provides a sample of the output voltage which is compared in the IC to the internal voltage reference. This reference voltage which is available at pin 6 is connected to voltage reference input pin 5 through resistor R7. Potentiometer R22 allows the positive output to be set accurately to +15.00 volts. Reference voltage for current foldback is connected to pin 3 of the IC with the current sensing input voltage supplied at pin 2 by resistor network R17 and R18. Pin 10 is the regulated output from the IC, and in this application, provides the base drive for the series-pass transistor Q1.

The negative regulator is formed by discrete transistors Q2, Q5, Q6, and Q8. Transistors Q2 and Q6 are formed as an equivalent p-n-p high current, emitter-follower pass transistor. Transistor Q5 provides a constant current to the drive circuit of the pass transistor. Voltage feedback is from adjustable divider string R24, R25, and R26 connected between the regulated positive and negative outputs. This feedback voltage is compared against ground by transistor Q8. Any error is amplified by Q8 to control the amount of base drive to Q6 and hence negative output voltage.

The current foldback circuit for the negative supply is formed by transistor Q7 and resistors R15, R12, and R13. This circuit senses the negative supply current through R15 and under short-circuit condition reduces drive current to the base of Q6, and hence output supply current to a safe thermal level.

Diodes CR8 and CR9 provide output reverse voltage protection. Diodes CR3 and CR4 provide regulator reverse voltage protection.

Output voltage test jacks TP1, TP2, and TP3 are provided on the heat sink panel for checking output voltages. Maximum ripple on outputs under 115V rms input and 1.5-ampere full load is less than 4 mV p-p for the positive supply and less than 8 mV p-p for the negative supply.

4.3.2 MODEL 6601 DOWNCONVERTER

4.3.2.1 First Local Oscillator. Figure 7-6 is the schematic diagram to which the following detail circuit description is referenced. Refer to the block diagram discussion in paragraph 4.2.2.1 for overview information on inputs, outputs, and circuit interconnection.

The reference oscillator consists of transistor Q1 and associated components. Resistor R3 and capacitors C3 and C4 decouple the -15V dc supply from the oscillator. Resistors R1 and R2 bias the transistor Q1 base at approximately -7.4V dc. Resistor R4 establishes transistor Q1 emitter current at approximately 4 mA. Capacitors C1 and C2 provide emitter-to-base feedback for the common collector oscillator. Capacitor C22, in conjunction with the capacitance of C1, C2, and Q1, provides the required 32 pF loading for the parallel resonant channel crystal, Y1.

Capacitor C5 couples the reference oscillator signal to one of the inputs of the phase-frequency detector, U1. Resistors R5 and R6 bias the U1 input so that the ac coupled reference oscillator signal will toggle U1. Capacitors C6 and C7 decouple the +5.0V dc supply from the phase-frequency detector. Resistors R10 through R13 terminate the U1 outputs. Resistors R14 through R20, capacitors C8 through C12, and operational amplifier U2 comprise the active loop filter which assures stable loop operation with sufficient reference sideband rejection. The node R20-C12 is the filtered control voltage which tunes the VCO varactors through RF choke L2 to lock the VCO on the 64th harmonic of the reference oscillator.

Resistors R28 and R29 bias, via RF choke L4, the base of transistor Q2 at approximately -8.3V dc. Resistor R30, via decoupling inductor L5, establishes transistor Q2 emitter current at approximately 60 mA. Capacitor C19 and ferrite beads E5 through E8 decouple the -15V dc supply from the VCO. Capacitor C18 blocks the transistor Q2 base voltage from the VCO tuning varactors, CR2 and CR3. Inductor L3 provides a low frequency ground for the cathode of tuning varactor CR3. Inductor L1 taps the signal from the VCO printed inductor. The signal is buffered to the first LO output connector via a 5-dB resistive pad, R31, R32, and R33. Resistors R26 and R27 attenuate the VCO output which is then coupled to the divide-by-64 prescaler, U3, by capacitor C16.

Capacitors C13 and C14 bypass the prescaler AGC dc voltage. Capacitor C15 decouples integrated circuit U3 from the +6.8V dc supply. Resistor R21 provides a logic high to pin 14 of U3, enabling the UHF section of the prescaler. Resistors R7, R8, and R9 level and bias shift the TTL output of U3 to the ECL input of U1.

Ferrite beads E9 through E12 decouple the +15V dc supply from the first LO. Resistor R25 predrops the +15V dc prior to the voltage regulator, U4, to reduce power dissipation in the regulator. Capacitor C17 provides additional decoupling of the +15V dc supply. Voltage divider R23 and R24 sets the output of the adjustable voltage regulator at +6.8V dc. Resistor R22 and zener diode CR1 provide a +5.0V dc supply for the phase-frequency detector U1.

Ferrite beads E1 through E4 reduce the level of high frequency signals, present within the first LO, escaping via the channel crystal Y1. Diodes CR4 and CR5 protect the first LO from a reversed power supply line.

4.3.2.2 Second Converter. Figure 7-9 is the schematic diagram to which the following detail circuit description is referenced.

The second converter consists of mixer A1, local oscillator chain Q1 through Q3, and a 70-MHz amplifier (Q4 and Q5).

The local oscillator frequency of 810 MHz is generated by crystal oscillator Q3 oscillating at 101.25 MHz and doubling to 202.5 MHz in its collector circuit. Transistor Q2 doubles from 202.5 MHz to 405 MHz and transistor Q1 doubles from 405 MHz to 810 MHz. The output of transistor Q1 is filtered by a printed filter which is tuned by capacitors C3 and C7 for minimum loss at 810 MHz. The output of the filter at 810 MHz is applied to mixer A1, where it combines with the IF input at 880 MHz to provide a signal at 70 MHz.

Inductor L8 and capacitor C16 provide filtering of the image frequency and LO frequency at the input to the amplifier, Q4 and Q5. Transistors Q4 and Q5 are a feedback pair amplifier with 17 dB gain. Capacitor C25 provides an adjustment for overall flatness of the frequency response.

4.3.3 MODELS 6602 AND 6603 DOWNCONVERTERS

4.3.3.1 Agile Local Oscillator. Figure 7-13 is the schematic diagram to which the following detail circuit description refers. The block diagram discussion in paragraph 4.2.3.1 contains an overview of information on inputs, outputs, and circuit interconnections.

The reference oscillator consists of transistor Q1 and associated components. Resistor R3 and capacitors C5 and C6 decouple the -15V dc supply from the oscillator. Resistors R1 and R2 bias the transistor Q1 base at approximately -7.4V dc. Resistor R4 establishes the Q1 emitter current at approximately 4 mA. Capacitors C3 and C4 provide emitter-to-base feedback for the common-collector oscillator. Capacitors C1 and C2, in conjunction with the capacitance of capacitors C3, C4, and transistor Q1, provide the required 32 pF loading for the 5.0 MHz parallel-resonant reference oscillator crystal, Y1. Variable capacitor C1 is used to tune the load capacity and, therefore, set the oscillator on 5.0 MHz. Capacitor C7 couples the reference oscillator signal to the input of the reference divide-by-four integrated circuit, U1. Resistors R5 and R7 bias the U1 input so that the ac coupled reference oscillator will toggle U1. Resistors R6 and R8 are used to provide a logic high to pins 1, 4, 10, and 13 of U1. The output of U1 at 1.25 MHz drives the reference divide-by-16 integrated circuit, U2. The output of U2, which drives the phase-frequency detector, U3, is at 78.125 kHz, the reference frequency for the loop. Capacitor C8 decouples the reference dividers from the +5.0V dc supply.

Capacitor C9 decouples integrated circuit U3 from the +5.0V dc supply. Resistors R10 through R16, capacitors C11 through C14, and operational amplifier U4 comprise the active loop filter which assures stable loop operation while providing rejection of the 78.125 kHz reference sidebands. Capacitors C15, C16, C34, and C35, and inductors L1 and L3 comprise a passive Butterworth low-pass filter for additional rejection of the reference sidebands. The node L3-C35 is the filtered control voltage which tunes the VCO varactors through RF choke, L4. Resistors R24 and R25 bias, via RF choke L6, the base of transistor Q2 at approximately -8.3V dc. Resistor R26, via RF choke L7, establishes the transistor Q2 emitter current at approximately 67 mA. Capacitors C37, C38, and C39 and resistor R27 decouple the -15V dc supply from the VCO. Capacitor C36 blocks the transistor Q2 base voltage from the tuning varactors CR3 and CR4. Inductor L5 provides a low frequency ground for the cathode of tuning varactor CR4. Inductor L2 taps the signal from the VCO printed inductor. The signal is buffered to the agile LO output connector via a 5-dB resistive pad, R21, R22, and R23. Resistors R19 and R20 attenuate the VCO output which is then coupled to the divide-by-64 prescaler, U8, by capacitor C33.

Capacitors C17 and C18 bypass the prescaler AGC dc voltage. Capacitors C22 and C26 decouple the +6.8V dc supply from integrated circuit U8. Resistor R17 provides a logic high to pin 14 of U8, enabling the UHF section of the prescaler. The output of the prescaler drives the clocks of the programmable divider chain U5, U6, and U7. Divider U5 is the most significant digit of the programmable divider cascade. Resistor R9 pulls pin 3, the least significant bit to logic high, presetting divider U5 to 100. Resistor R18 pulls pin 5, the "4" bit of the tens digit of the programmable divider cascade, to a logic high. The program divide ratio command to pins 3 and 4 of divider U6 then adds 0, 10, or 20 to the always present 40 to preset the tens digit. The units digit command controls pins 3 to 6 of divider U7. Capacitors C27 through C32 bypass the programmable divider command input lines. Capacitors C10, C21, and C25 decouple the programmable divider chain from the +5.0V dc supply.

Capacitors C19 and C23 decouple the agile LO from the +15V dc supply. Capacitors C20 and C24 decouple the agile LO from the -15V dc supply. Diodes CR1 and CR2 protect the agile LO from reversed ±15V dc supplies.

4.3.3.2 Interface Logic Board (Model 6602 Downconverter). Figure 7-15 is the schematic diagram of the interface logic board. Refer to paragraph 4.2.3.2 for a detailed discussion of the interface logic board, both at a block diagram and schematic diagram level.

4.3.3.3 Interface Board (Model 6603 Downconverter). Figure 7-44 is the schematic diagram of the interface board. Refer to the last two paragraphs of section 4.2.3.2 for description of the auto polarization relay driver and power supplies of this board. These circuits are identical to the corresponding circuits on the Interface Logic Board.

4.3.3.4 Second Converter. The discussion for the Model 6601 second converter is applicable to the Models 6602 and 6603 second converter (refer to paragraph 4.3.2.2).

4.3.4 INTERCONNECTING BOARD A3

This printed wiring board is utilized to interconnect modules and panels inside the receiver. Theory of operation is considered to be self-explanatory. Refer to figure 7-18 for the schematic diagram.

4.3.5 CONNECTOR BOARD A4

This printed-wiring board is utilized to interface the outputs from the various modules with the rear panel connectors. Theory of operation is considered to be self-explanatory. Refer to figure 7-19 for the schematic diagram.

4.3.6 IF AMPLIFIER A5

Figure 7-21 is the schematic diagram to which the following detail circuit descriptions are referenced. Refer to the block diagram discussion in paragraph 4.2.5 for overview information on inputs, outputs, and circuit interconnections and interactions.

All nine active broadband IF amplifiers are similar in design and operation. Each amplifier employs two high frequency transistors in a feedback-pair configuration. For this discussion, refer to the 4th amplifier (Q8, Q9). Voltage gain is determined by the ratio of feedback resistor R41 to the input resistor R39. Input and output impedances are determined by resistors R39 and R46, respectively. Capacitors C37 and C43 provide improvement in impedance matching at frequencies above 70 MHz.

Figure 4-18 is a simplified schematic of one of the two PIN diode attenuator sections. These sections permit the attenuator driver (Q23, U3B) to vary the overall gain of the IF amplifiers, thereby regulating the IF gain of the receiver.

The attenuator sections are at minimum loss, and the gain through the amplifier is maximum, when greater than +4.5V dc from the driver is applied to

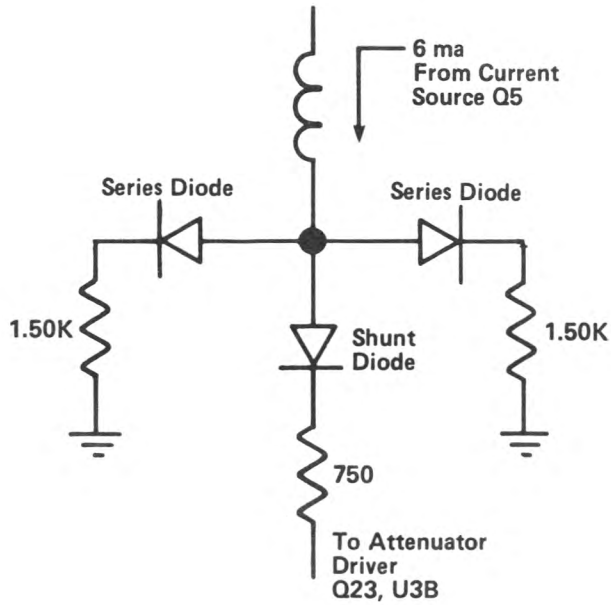


Figure 4-18. IF Amplifier PIN Diode Attenuator Section, Simplified Schematic Diagram

the cathodes of the shunt diodes. Under this condition, the series diodes are forward biased and equal currents are flowing through each of the series diodes. Attenuator current source Q5 is set to supply 12 mA total current to the two attenuator sections, thus 3 mA in each series diode.

As the driver voltage changes from greater than +4.5V dc to near 0V, the distribution of the 12 mA current flow shifts from the series diodes to the shunt diodes. This reduces the RF resistance of the shunt diodes and increases the resistance of the series diodes, resulting in a reduction of gain through the section. When 6 mA is flowing in each of the shunt diodes and the series diodes are off, gain is minimum.

The group delay equalizer section (L6, L7) is a single bridged-T second order all-pass network. Adjustment is by means of inductors L6 and L7 which are adjusted for a minimum amplitude dip at 71.1 MHz. This section compensates for the non-flat group delay produced by the IF filter sections. Final fine-tuning of inductors L6 and L7 is during complete video receiver alignment while looking at differential phase and gain performance.

The bandpass filter portion of the amplifier consists of five two-pole tuned circuits isolated by active broadband IF amplifier stages discussed previously. The response of the individual circuit is nominally identical. The gains of the active stages vary.

Type F coaxial test jacks (TP1 through TP5) and adjacent pluggable straps (E1 through E5) are provided such that each jack can be either (1) bypassed with the strap plugged for normal interstage through-connection, (2) used as input to the following stages, or (3) used as an output from the preceding stages.

For each filter pole-pair, two inductors and a coupling capacitor are adjusted to produce a certain desired frequency response (which is the same for each pole-pair). After each pole-pair is pre-aligned, a second pass is made to achieve the desired cascade response. The cascade is built up (start at the output stage) by adding and fine-tuning one stage at a time to what has already been done. This process continues until all five tuned stages are through-connected and all are fine-tuned.

This procedure allows the effects of interstage interaction to be tuned out and also provides the opportunity to compensate the tuning of an added stage to any build-up of minor imperfections in the frequency response. The responses for different number of stages in cascade are all different, since the band-edge rolloff slope increases as stages are added.

The output IF level of the amplifier is detected by the AGC level detector (CR9, U1). Diode CR11 provides a forward bias for both the reference diode CR10 and detector diode CR9. The dc voltage gain from the anode side of CR9 to pin 6 of U1 is typically (15/3.3) 4.55. The dc level at pin 6 for -5 dBm amplifier output is typically -0.3V dc with slope of 0.037V/dB. The output from pin 6 of U1 is summed with the typical +0.3V dc reference voltage from Level Set potentiometer R122 by integrator U2B, the AGC loop filter.

When in the AGC mode, the output control signal from pin 7 of the loop filter is connected to the attenuator shaping network Q21, Q22, and U3A. To provide the linear 10 dB/volt (or 1 volt/10 dB) control signal characteristic at this point, U3A and its level sensitive feedback segments generate the required shaped attenuator driver input voltage signal versus C/N signal voltage.

From the SELECT switch S1 the linear control signal is also inverted by unity gain signal noise buffer U2A for connection to C/N outputs at fingers 10, 11, and 12 of plug P1. This -1V/10 dB output signal can be offset about ground by the ZERO-ON-NOISE potentiometer R130.

4.3.7 VIDEO DEMODULATOR A6

Figure 7-23 is the schematic diagram to which the following detail circuit descriptions are referenced. Refer to the block diagram discussion in paragraph 4.2.6 for overview information on inputs, outputs, and circuit interconnections and interactions.

The IF signal enters the video demodulator module at a level of -5 dBm. An L-pad, R10 and R11, and an amplifier Q1 and Q2, provide a gain of 2.7 dB at the output side of R17. Input matching is set by R10 and R11 at 75 ohms. Output matching is set by the single 75-ohm resistor R17. In addition to the small amount of gain, this L-pad and amplifier combination pro-

vides a large amount of buffering between the nonlinear input stage of limiter U2A and U2B and the input of the video demodulator module. IF passes into pin 7 of U2A, a digital integrated circuit. This circuit is operated in a linear mode due to dc feedback from pin 14 of U2B back through R25, potentiometer R24, and resistor R18. This network provides biasing which operates this limiter close to the linear region so that the incoming signal switches integrated circuit U2A back and forth between logic 1 and logic 0 at its output, pin 15. The signal coming out of pin 15 passes into a 5-pole, low-pass filter consisting of C22, L4, C23, L5, and C24. The purpose of this filter is to provide filtering for third order and higher harmonics generated by the limiter. The second harmonic is nulled by adjustment of R24. Therefore, the signal coming out of the filter at C24 is a fairly clean sinusoidal RF signal which is a reproduction of the input frequency and constant in level.

Resistors R34, R35, and R36 form an attenuator which feeds a buffer amplifier, Q3. This buffer amplifier drives a linearization network consisting of L7, C30, C31, and R44. Both L7 and C31 are adjustable along with R44. This network is generally tuned close to the center frequency (70 MHz), and the L/C ratio is set for best linearity. R44 permits adjustment of the network Q. Linearity can generally be set to better than ±1% over ±15 MHz around the center frequency.

Transistors Q4 and Q5 form a feedback amplifier providing a gain of 21 dB. The output of this amplifier is passed into the two discrimination drivers, Q8 and Q9. Parallel-tuned networks on the collectors of these transistors form the two discriminator poles. The Q's of the networks are adjustable by the use of potentiometers R69 and R70. Two diodes, CR7 and CR8, provide RF detection followed by low-pass filters. The purpose of these filters is to remove the IF frequency from the baseband signal before summation of the two discriminator halves. Transistors Q10 and Q11 are buffers which sum the two discriminator halves. The baseband signal out of the summing network is amplified by a broadband video amplifier, consisting of transistors Q12, Q13, and Q14; the gain is 25 dB. R85 and C52 form a compensation network which results in a very flat frequency response (±0.25 dB from 1 Hz to 10 MHz). The baseband signal out of Q14 is de-emphasized and amplified again by a similar video amplifier, consisting of transistors Q15, Q16, and Q17. The gain of this amplifier is set to deliver 1 volt of video into a 75-ohm load by adjustment of potentiometer R94. Reference deviation is 10.75 MHz peak for video. Gain is typically 12 dB.

Threshold extension is provided by a loop around the limiter U2A and U2B. The loop is switched in when the incoming C/N bus on P2-1 reflects a C/N of less than 14 dB. This threshold is adjustable by setting potentiometer R2. Diodes CR1 and CR2 are PIN diodes utilized for switching the loop in and out. The threshold extension loop consists of delay line DL1, plug-in pad AT2, impedance matching transformer T2, a bandpass filter formed by L1, L2, CR4 through CR6, impedance matching transformer T1, and attenuator AT1. This loop converts the limiter U2A and U2B to an injection-locked oscillator in the threshold extension mode. The natural frequency of this oscillator is influenced also by a filtered video feed obtained from the output of transistor Q14. This video is filtered, amplified by transistors Q6 and Q7, and fed to the cathodes of three varactor diodes CR4 through CR6. These diodes steer the natural frequency of the oscillator in the proper sense for video threshold extension. Diodes CR1 and CR2 are turned on by integrated circuit U1 when the C/N ratios are less than 14 dB.

4.3.8 VIDEO CLAMP A7

Figure 7-25 is the schematic diagram to which the following detail circuit descriptions are referenced. Refer to the block diagram discussion in paragraph 4.2.7 for overview information on inputs, outputs, and circuit interconnections and interactions.

The composite input signal consisting of the video signal, all subcarriers, and the dispersal waveform is supplied on plug P2, pin 8, shown in the upper left corner of the schematic diagram. This signal is buffered by emitter follower Q1 and is supplied through R5 to a lowpass filter and the phase equalizer. The lowpass filter consists of L1, L2, and associated components. The phase equalizer consists of inductors L3 through L5 and associated components.

The output from the filter is partially terminated by resistor R6 with the remainder of the termination being provided through the VIDEO LEVEL control potentiometer on the front panel of the receiver. The signal returns from the wiper of the front panel level control on P2, pin 2, shown in the center left of the schematic diagram. Video is then applied to the

non-inverting input of a video amplifier consisting of integrated circuit U1, transistors Q2 through Q5, and associated components.

Integrated circuit U1 is configured as a differential amplifier with a video input being supplied on pin 5 and the feedback being supplied on pin 1. A differential output from this stage is taken between pins 6 and 8 and is supplied to a gain stage consisting of transistors Q2, Q3, and associated components. Diodes CR1 through CR4 provide compensation for the base emitter drops in Q2 and Q3 and, in addition, set up a quiescent bias current through R14. Capacitor C20 and resistor R10 provide closed loop compensation for the video amplifier. The signal after voltage amplification in Q2 and Q3 is supplied to the base of Q4 and to the base of Q5. Diodes CR5 and CR6 compensate for the base emitter drop in transistors Q4 and Q5. The output signal is taken from the junction of R19 and R20 in the emitter circuit of the output stage. Feedback is supplied through resistor R23 and compensation capacitor C25, and the output signal is supplied through matching resistors R24 and R25, shown near the top right of the schematic diagram.

The output signal is also supplied to an active bandpass filter in the video alarm circuit. The active bandpass filter consists of integrated circuit U2A and associated components. This circuit is centered on the synchronization frequency of approximately 15.75 kHz. The output of the active bandpass filter is supplied to a rectifier circuit consisting of integrated circuit U3A and associated components and to a filter circuit consisting of U3B and associated components. The output from U3B is the VIDEO ALARM signal supplied on plug P1, pin 12. This signal is used for automatic protection switching.

Additionally, the video output signal from the junction of resistors R19 and R20 is supplied through a sample and hold circuit consisting of switch transistor Q6, sampling capacitor C36, and the high impedance non-inverting buffer amplifier U2B. The sampling transistor Q6 is turned on by the sync separator circuit during the sync tip period. The voltage existing on the video output amplifier during the sync tip is thus stored on capacitor C36 and buffered by intergrated circuit U2B. U2B also provides a level shifting function to permit the sync tip voltage to be offset from the 0V level by sufficient amount that the blanking signal is normally at 0V. From buffer amplifier U2B, the sample of the sync signal is supplied to an integrator consisting of U4A and a lowpass filter U4B. These two operational amplifiers provide servo compensation for the feedback loop used to reject the dispersal waveform. The output signal on pin 1 of U4B is buffered by Q7 and is supplied back through resistor R39 to the inverting input of the video amplifier U1, pin 1. The signal on the emitter of Q7 is that required to hold the output of the video amplifier during sync time to a predetermined level. Thus, the signal seen on the emitter of Q7 is normally a triangular wave used to cancel the dispersal waveform.

The sync separator circuit shown in the lower left of the schematic diagram consists of transistors Q8 through Q10 and integrated circuit U5. The input to the sync separator is from the emitter of buffer transistor Q1. Transistor Q8 provides additional isolation between the video signal and the sync separator. Field effect transistor Q9 provides a high impedance load to the video signal, capacitively coupled through C43. A feedback loop from the collector of Q10 back to the gate of Q9 through R58, R61, and CR10 provides that, with no input signal to the sync separator, the voltage on the source of Q9 is approximately two diode drops below ground. When a positive-going video signal is encountered, transistor Q10 is shut off and the voltage on the collector of Q10 drops toward -15V. During the sync tip interval, transistor Q10 enters the active region and the voltage on its collector rises towards 0V. Comparator U5 detects the change in voltage on the collector of Q10 and converts it to a signal switching between -15V and 0V, which is used to supply the switching signal to switch transistor Q6.

4.3.9 AUDIO DEMODULATOR

Figure 7-27 is the schematic diagram to which the following detail circuit descriptions are referenced. Refer to the block diagram discussion in paragraph 4.2.8 for overview information on inputs, outputs, and circuit interconnections and interactions.

With the exception of component values and on-board level adjustments, all of the audio demodulator schematic diagrams are identical. The 6.8-MHz program demodulator (figure 7-27) only, will be discussed below; the schematic diagrams and printed-wiring board assemblies of the other optional audio demodulator boards (see table 1-1) are shown in figures 7-32 through 7-39. The subcarrier input appears on P2, pin 8, shown in the upper left of the schematic diagram. It is supplied to buffer amplifier Q1, then to a 3-pole bandpass filter consisting of L1

through L3 and associated components. This filter is tuned to the subcarrier frequency; for example, 6.8 MHz. A detector on the output of the filter, consisting of CR1 and associated components, is used during initial factory alignment. From the filter, the signal is applied to the input of integrated circuit U1 which contains both a limiter amplifier and a quadrature detector. The detector is tuned by the 2-pole tuned circuit consisting of L4, L5, and the associated components. A detector test point on P1, pin 4, is used during the initial alignment of the discriminator and, in addition, is used for possible future demodulation of cue channels superimposed upon the audio carrier.

The audio is taken from the discriminator in the path indicated by flag A and is supplied to the input of a 5-pole active lowpass filter beginning in the center left of the schematic diagram. Integrated circuits U2A and U2B and associated components form a 5-pole lowpass filter whose purpose is to remove supersonic noise from the audio signal. The output of the lowpass filter is applied to P2, pin 12, in the case of the program audio channel. This pin is connected to the clockwise end of the level control potentiometer on the front panel. In the case of all audio demodulators except the program audio, this potentiometer is located on the printed-wiring board. The wiper from the potentiometer is returned to the printed-wiring board on P2, pin 11. Here the audio signal is coupled through resistor R30 into an operational amplifier consisting of U3B, Q2, Q3, and associated components. This stage is a conventional inverting operational amplifier with a compound emitter follower on its output to provide additional current drive capability. Feedback is provided through R31 and C37. Capacitor C37 is the deemphasis capacitor. Output from this amplifier is supplied to build-out resistors R52 and R54 to provide one side of the balanced audio output. The other side of the balanced audio output is provided by an identical power amplifier consisting of U3A, Q4, Q5, and associated components. Feedback for this stage is provided through resistor R45; the circuit is configured as a unity gain inverting amplifier. The output from this amplifier is provided through resistors R53 and R55 to form the other side of the balanced audio output.

4.3.10 4.5-MHz SUBCARRIER MODULATOR

Figure 7-29 is the schematic diagram to which the following detail circuit descriptions are referenced.

Audio is supplied from the program audio circuit board on terminal P2-11, shown near the upper left of the schematic diagram. This audio signal is amplified by buffer amplifier U1 and is supplied then to the DEVIATION potentiometer R5. This potentiometer is used to set the deviation of the subcarrier after the program audio level has been set by the front panel potentiometer. Following the DEVIATION control potentiometer the signal is applied to amplifier U1B. This is an inverting amplifier. Provision is made in its feedback for incorporation of the Model 6350AML audio modulation limiter plug-in (see figure 7-31). This limiter detects the presence of a signal level on pin 5 of the limiter which exceeds a preset threshold. When this happens, the modulation limiter option provides additional feedback in parallel with resistor R9 to reduce the gain of U1B. Following this amplifier, the signal is supplied to a threshold detector consisting of amplifier U2, section A and B. Amplifier U2A is a precision rectifier. The output of this stage is applied to the summing junction, pin 6 of U2B, as a unidirectional current. Current is always being drawn away from the summing junction through either resistor R17 or resistor R18. Current is being supplied through resistor R19 from the +15-volt supply. For low audio levels, more current will be provided through resistor R19 to the summing junction than will be removed by the rectifier circuit. However, should the audio level increase beyond that required for 25-kHz deviation, more current will be removed from the summing junction through resistors R17 and R18 than is being supplied by resistor R19. When this happens, the voltage at the summing junction of U2B drops below zero volts, causing the output of U2B to go high. This turns on transistor Q1 which, in turn, turns on the OVERDEVIATION LED, DS1.

The output from amplifier U1B is also supplied to the deviation sensitivity potentiometer R12. This potentiometer is used to ensure that the deviation of the oscillator is at 25 kHz when the OVERDEVIATION indicator first illuminates. The oscillator circuit consists of transistors Q2 and Q3 configured as a negative resistance amplifier. The frequency of oscillation is determined, in part, by the varactor diode CR4. Energy is taken from the source of transistor Q3. The output of the oscillator is supplied to buffer amplifier Q4.

At the collector of Q4, the oscillator signal exists as a high amplitude, high impedance signal which is supplied to frequency divider U3. The output of U3

is applied to phase detector U4. The other input to U4 is from a crystal oscillator and divider, consisting of U6 and U5. This is shown just below and to the right of phase detector U4. The output from U4 on pin 13 is a voltage proportional to the phase error between the crystal oscillator and the voltage controlled oscillator. Loop compensation is provided by resistors R39, R40, and R41 and capacitors C22 and C23. The voltage is then applied back to the varactor in the voltage controlled oscillator, through R31. Thus, the phase-locked loop functions to force the center frequency of the voltage controlled oscillator to be 4.5 MHz.

A second output from buffer amplifier Q4 is taken from the emitter. This is applied to a voltage controlled amplifier, U7. The gain of U7 is controlled by the voltage on pin 5 which, in turn, is determined by the setting of the OUTPUT potentiometer R50. Output from the voltage controlled amplifier is taken from pin 6 and is supplied through a low-pass filter to resistor R52, which ensures that the impedance level of the output signal is very high. This permits the output from the subcarrier modulator to be paralleled with the VIDEO 2 output from the video clamp module.

4.3.11 AUDIO MODULATION LIMITER OPTION

The optional audio modulation limiter board is inserted in the 4.5-MHz subcarrier modulator board as shown on the schematic diagram for the 4.5-MHz subcarrier modulator (figure 7-29), near the left top of the schematic. The audio modulation limiter effectively places in the feedback around operational amplifier U1B a variable resistor whose value depends upon the peak-to-peak amplitude of the output signal on pin 7 of U1 in the subcarrier modulator. Refer now to figure 7-31, the schematic diagram of the audio modulation limiter. Input on pin 5 of the limiter is from the output of operational amplifier U1B on the 4.5-MHz subcarrier modulator. This signal is applied to two places. It is applied through resistors R2 and R3 to operational transconductance amplifier U1 (audio modulation limiter). Amplifier U1 acts as a variable resistor in the feedback for the operational amplifier on the 4.5-MHz subcarrier modulator printed-wiring board. The value of the effective resistance of U1 is determined by the current coming into pin 5 of U1. This current is determined by the feedback loop shown below U1.

The audio input on pin 5 of the audio modulation limiter is also applied to a precision full-wave rectifier consisting of U2D and U2C. The signal on pin 10 of U2C is negative-going from the 10-volt reference and is proportional to the peak amplitude of the audio signals. Since a full-wave rectifier is involved, the voltage on pin 10 will be proportional to either the negative or positive peaks, which ever is greater. The peak voltage on pin 10 is stored in capacitor C2 and buffered by U2B. The output of U2B, pin 4, is a voltage proportional to the excess peak-to-peak amplitude of the incoming signal on pin 5 of the audio modulation limiter. This voltage is applied to the base of current-source transistor Q1, whose output current is used to control the transconductance of operational transconductance amplifier U1, thus adjusting the effective resistance in the feedback around the operational amplifier on the 4.5-MHz subcarrier modulator printed-wiring board.

4.3.12 -24V DC POWER SUPPLY

Figure 7-41 is the schematic diagram to which the following detail circuit descriptions are referenced.

The -24V dc power supply is constructed in such a way that all of the switching is carried out on plug-in cards; one for each polarity. They are identical in construction, but different in function. As mentioned in paragraph 4.2.10, the negative switching board is the slave of the positive switching board.

U1 is a switchmode regulator control circuit which provides the pulse width modulation function. The internal oscillator of the positive supply U1 is enabled by R25 and C8 which set the frequency to approximately 45 kHz. This signal also drives U1 of the negative supply through pins 5 and 3.

Power for all of the control circuitry is supplied by a negative 15-volt dc voltage regulator U5. Hence, all ground pins of the various integrated circuits are floating at -15 volts.

The outputs of U1 on the switching boards alternatively switch power Darlingtons Q3 and Q4 through drivers Q1 and Q2. Due to the unmatched properties of the Darlington transistors, potentiometer R11 is set at the factory to balance the drive signals and produce a symmetrical switching waveform. This circuit connects the input dc alternately across half of transformer T1, resulting in a positive and

negative-going pulsed waveform. It is stepped up slightly and then full-wave rectified by the diodes on the interconnect board (CR11 and CR12 for positive output; CR14 and CR15 for negative output). The fundamental switching waveform is filtered by L1 and C9 or L3 and C16. High frequency switching noise is further attenuated by L2, C10, C11 or L4, C17, C18, and J2.

The pulse width is determined by the dc level present at pin 6 of U1. With reference to ground pin 12, 2.4 volts yields close to a 50% duty cycle (perfect square wave before rectification) and 6 volts narrows the pulse width to zero (no pulses at all). During normal operation of this supply, the duty cycle will range from 45% to 26% before rectification, depending on the input voltage.

Voltage regulation is carried out by an operational amplifier connected to pin 6 of U1. This amplifier is arranged in an integrating configuration to eliminate sensitivity to switching ripple. The output of the supply is fed back to one input through a voltage divider while a comparison level is set up on the other input, using U5 as a reference. Adjustment of the reference varies the output dc level (potentiometers R10 and R34).

Current limit and foldback protection also utilize pin 6 of U1. Pulse width is narrowed when a current emergency is detected. Current limit is set at the factory (R22 and R47) to approximately 1.8 amperes. A current sensing resistor R28 and R54 establishes a dc level directly proportional to the output current. This level is used in a very similar manner as the voltage regulation feedback signal. It is compared to a reference in an integrating amplifier and diode ORed with the control voltage on pin 6 of U1.

Due to the wide range of input voltages, either a great deal or very little power may be dissipated in the current limit mode. Therefore, a current foldback circuit has been included to take effect during limiting. While the current limit is directly affected by output current, the foldback circuit includes output voltage as a consideration. Hence, two modes of excess current protection are provided.

The foldback signal is derived from resistive dividers composed of R26, R27, R28 and R52, R53, R54. As the output voltage approaches zero, so does the foldback voltage. This voltage is amplified (and inverted for the positive supply) and diode ORed to those signals going into pin 6 of U1. A decrease in output voltage resulting from current limiting causes the foldback circuit to narrow the pulse width which lowers the output further. The foldback reference is set at the factory (R16 and R40) to engage at approximately 1.7 amperes.

One final signal connected to the control pin (pin 6) on U1 is the soft start feature. During initial turn on, a current surge could cause the power transformers to saturate. Therefore, the control pin is held high by a decaying charge on C1. This forces a slow turn on, protecting the supply.

As the input voltage decreases, the duty cycle increases. Eventually, the control circuit would attempt to exceed a 50% duty cycle, resulting in both power transistors Q3 and Q4 being on simultaneously. Excessive current would flow resulting in a failure. This situation is prevented by an external setting on U1. Potentiometer R4 is set at the factory to establish a minimum dead time in the switching waveform.

Input overvoltage protection is provided by CR2, a 37.1 to 41.0-volt varistor. Reversed polarity inputs are shorted by CR1 to blow fuse F1.

The outputs are protected against overvoltage by triacs Q2 and Q3. They short the input and blow fuse F1. When the output voltage exceeds the CR4 zener voltage of the negative supply, Q3 triggers. For the positive supply, the output plus 15 volts must exceed the zener voltage of CR3 and turn on Q1 to trigger Q2. Either way, the input fuse blows and shuts down the entire supply.

SECTION 5
MAINTENANCE

5.1 GENERAL

This section contains the information necessary to perform the maintenance on the Series 6600 video receiver. Included are preventive maintenance and corrective maintenance (including troubleshooting) procedures.

Internal alignment of all modules and printed-wiring boards have been meticulously made at the factory using a lengthy and costly list of test equipment outlined in detail factory test procedures (not included in this manual). Realignment in the field is not normally recommended. However, certain internal faulty components may be replaced without realignment of the modules or printed-wiring boards being required. The internal troubleshooting information presented in this section is intended to aid in isolation of components in modules or printed-wiring boards. If after isolation and replacement of faulty internal components, there is any question about the need for complete realignment of a module or printed-wiring board, consult the factory for advice (refer to page 1-14 for phone numbers).

Troubleshooting plug-in cards requires the use of card extenders available from Scientific-Atlanta. A card extender maintains all electrical connections between the receiver and the card, but allows internal access during troubleshooting.

If it is not desirable to perform maintenance in the field, the unit or module can be returned to Scientific-Atlanta where it will be repaired at no charge under warranty conditions; otherwise, repair will be made at a nominal charge. Refer to paragraph 1.8 for information pertaining to returning equipment to Scientific-Atlanta.

5.2 SPARES

The following paragraphs discuss three different considerations for providing spares for the Series 6600 video receiver.

In one mode of operation, up to seven Model 6601 video receivers can be used to receive different satellite frequencies and be monitored by a 1:N video protection switch to any of the frequencies received by the Model 6601 receivers. In this configuration the Model 6602 receiver is the spare and can be switched automatically while unattended in the event of a failure of a Model 6601 receiver.

In a second mode of operation, one Model 6601 receiver (the primary) can be monitored by a 1:1 video protection switch and a second Model 6601 receiver can be switched automatically while unattended in the event of failure of the first receiver.

In a third mode of operation, one or more Series 6600 video receivers can be backed up by a spare complement of the different modules and printed-wiring boards. Except for the downconverters, all modules and printed-wiring boards are common between a Model 6601 and Model 6602 receiver. Between a group of Model 6601 receivers or between a group of Model 6602 receivers, all modules and printed-wiring boards are common except for the optionally equipped program audio, cue demodulator, and other optional audio boards. This is a manual replacement of spares where no video protection switch is provided.

In any of the above modes of operation, in order to ensure no off-the-air time, one spare module or printed-wiring board of each type should be stored in a readily available place. Spare modules and printed-wiring boards should be kept wrapped to protect them from dust and should not be subjected to excessive heat, humidity, or vibration.

In any of the above modes of operation a Model 6603 receiver may be used in a manner identical to the use of a Model 6601 receiver.

5.3 VISUAL INSPECTION

Periodically make the following visual inspections:

a. Inspect the receiver mainframe for signs of damage from mechanical abuse.

b. Check for evidence of overheating, especially in the power supply. An accumulation of dust on the power supply heat sink will have an insulating effect and prevent efficient heat dissipation.

c. Check that all modules are firmly inserted in the proper locations.

d. Make sure that rear-panel connections are complete (figure 5-1).

e. Check the antenna for proper orientation.

5.4 CLEANING

Perform the following routine cleaning procedures:

a. Remove accumulated dust from inside and outside of the receiver cabinet with a forced air stream not to exceed a pressure of 10 psi.

b. Clean the connectors by using a low pressure air hose and small paint brush.

c. Clean meter lense using a soft, clean cloth.

5.5 FAULT ISOLATION

The information provided in this section will allow the operator to identify a faulty module or printed-wiring board so that he may replace it with a spare and resume operation. These module-level (or printed-wiring board) fault isolation procedures are performed primarily with the receiver's front-panel meter and a volt-ohm meter. IF measurements, when necessary, can be made with a power meter such as the Hewlett-Packard Model 435A. If a spectrum analyzer is available, RF input measurements, as well as more precise IF measurements, can be made.

5.5.1 PRELIMINARY CHECKS

In the event of an apparent malfunction, the operator should make the visual inspections described in paragraph 5.3 and the following preliminary checks before tracing signals.

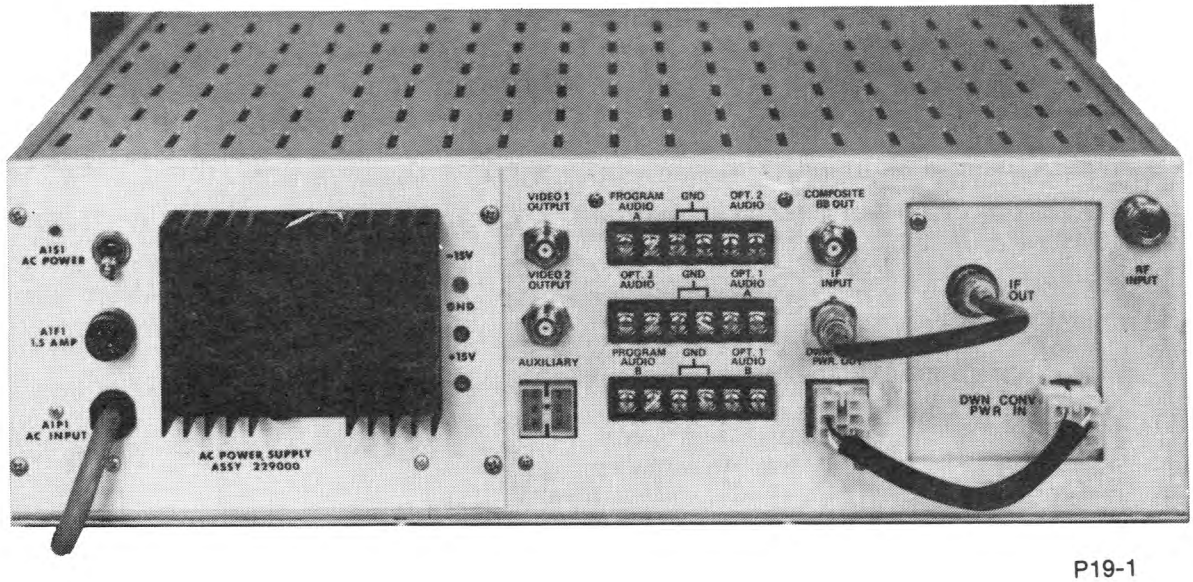
a. If the POWER indicator does not illuminate, the input fuse may have blown or the ac power line may not be properly connected. Refer to figure 5-1 for the location of the ac input and fuseholder. The correct fuse is a 3AG fuse rated at 1.5A for 115V ac operation.

b. Check the level and modulation settings of external equipment connected at the receiver's output. Input settings can cause distortion of the video signal.

If there are other Series 6600 receivers at the site, external problems can be identified by comparing the apparently faulty receiver to one that is operating correctly. If the apparently faulty receiver is a Model 6601, first install a crystal to correspond to the frequency of the receiver that is operating correctly; if the receiver is a Model 6602 or 6603, the frequency is selected by a front-panel switch. If the receiver that was formerly non-operational now performs properly, then there must be a problem with the incoming signal at the frequency for which it was previously set.

If, however, the malfunction persists, it will be worthwhile to check the external equipment connected at the output of the suspected receiver against equipment performing satisfactorily with another receiver. With the downconverter frequency still selected for the frequency known to be operational, connect the signal processing equipment to the receiver's output connectors. If the resulting output is still unacceptable, the receiver is most probably at fault.

Most instances of apparent receiver failure, especially those involving a noisy video signal, can be traced to a poor quality uplink signal, improper antenna orientation, or a malfunction in station equipment external to the receiver. These items should be checked very carefully before tests involving the receiver are undertaken.



P19-1

NOTE

The Model 6601 receiver is shown above; the fuse and rear-panel connections are the same for the Model 6602 and Model 6603 receiver.

Figure 5-1. Series 6600 Fuse Location and Rear Connections

-24 VOLT DC POWER SUPPLY

If the Series 6600 video receiver is provided with the -24V dc power supply option, the following preliminary maintenance checks should be made.

If the +15V and -15V dc output drifts, limited adjustment is provided by the appropriate multiturn potentiometer (see figure 5-2). Clockwise rotation of the potentiometer increases the absolute value of the voltage.

The fuse will blow due to a surge of current. This can be caused by:

a. Incorrect polarity input (connection should be: -24V dc to pin A; ground to pin B).

b. Overvoltage input (input range should be -19V to -32V dc).

c. Malfunction causing output overvoltage on either the plus or minus output.

d. Short circuit in the power supply.

If the problem is either (a) or (b) above, and is corrected, replace the fuse. If the supply continues to blow fuses, an oscilloscope and voltmeter will be necessary for further troubleshooting (refer to paragraph 5.6.11).

5.5.2 MODULE ISOLATION GUIDE

If all preliminary checks have been made and the malfunction remains, proceed with the signal tracing steps outlined in the module isolation guide, table 5-1. Select from the table the condition that most accurately reflects the existing problem and perform the checks listed for the condition. Paragraphs 5.5.2.1 through 5.5.2.4 provide instructions for making specific tests that are identified in table 5-1.

All the tests are made with power and signal applied unless otherwise noted. Except in those cases in which a VOM is specified, the meter referred to is the receiver's front-panel meter.

CAUTION

Do not remove or insert a module or printed-wiring board with power applied. Always turn off the receiver.

Refer to section 5.6 for detailed troubleshooting procedures for the individual modules and printed-wiring boards of the Series 6600 video receiver.

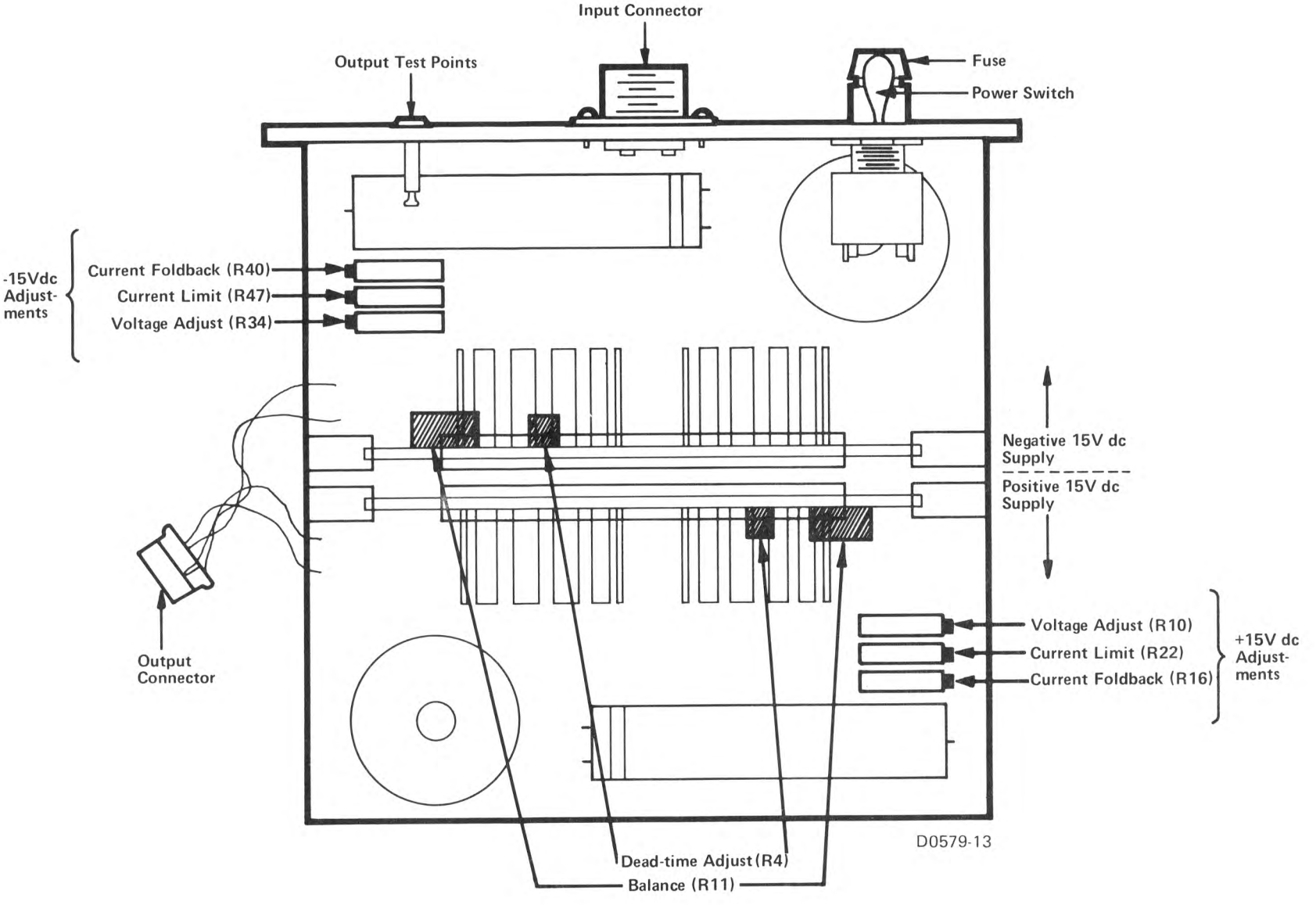


Figure 5-2. -24V dc Power Supply, Maintenance Diagram

TABLE 5-1. MODULE ISOLATION GUIDE

Condition	Corrective Action
POWER Indicator not illuminated	1. Check ac input: fuse, line cord, line voltage, and external circuit breaker (paragraph 5.5.2.1). 2. After the items in step 1 have been checked very carefully, check plus and minus 15V dc with VOM at test points on the rear panel. a. If dc voltages are present, replace indicator LED. b. If dc voltages are not present, check for a power supply short (paragraph 5.5.2.1). If no short is found, replace the power supply (paragraph 5.5.2.2).
VOM Indicates DC Supply Either Not Present or Low	If either dc supply is more than 10% from nominal, replace power supply (paragraph 5.5.2.1).
Video Output Distorted	1. Check level and modulation settings of external equipment on output side of receiver. 2. Check that other video output (if unused) is open or terminated in $\geq$ 75 ohms. 3. Check COMPOSITE BB output a. If distorted, video demodulator is probably defective and should be replaced. b. If not distorted, video clamp is the probable cause and should be replaced.
Video Output Noisy	Check zeroing of C/N meter and read C/N level. a. C/N reading 10-20 dB: replace video demodulator and recheck video output. If video output is still noisy, reinsert original video demodulator and replace video clamp. b. C/N reading less than 10 dB: check IF port on the rear of the downconverter with a spectrum analyzer for a signal level of -45 to -15 dBm. If this condition is not met, downconverter failure is probable. If this condition is met, IF amplifier failure is probable.
Video Output Not Present, But Audio Output Present	Replace video clamp and recheck video output. If video output is still not present, reinsert original video clamp, and replace video demodulator.
Neither Video nor Audio Output Present	1. Check C/N meter. IF C/N is 10 to 20 dB, check external equipment at the receiver's output. 2. If C/N is less than 10 dB, check output of IF amplifier at front-panel IF MONITOR; should be 70 MHz at -5 dBm $\pm$0.5 dB (paragraph 5.5.2.3).

TABLE 5-1. MODULE ISOLATION GUIDE - continued

Condition	Corrective Action
Program Audio Not Acceptable; Video Acceptable (paragraph 5.5.2.4)	1. Replace audio demodulator. 2. Recheck audio output. If output is still unacceptable, reinsert original audio demodulator and replace video demodulator.
Option Audio Unacceptable; Video and Program Audio Acceptable (paragraph 5.5.2.4)	Replace option audio printed-wiring board.

5.5.2.1 Power Supply Checks. Check for any blown fuses on the power supply printed-wiring board. If this condition exists, replace the power supply. If the fuses are not blown, check for possible short circuits inside the mainframe by disconnecting connector A1J1 from the interconnecting board and measuring the voltage on the +15V and -15V dc test points. If the voltage recovers, reconnect connector A1J1 and unplug the modules one at a time until the defective board is found.

5.5.2.2 Power Indicator. The POWER indicator is an LED and requires both plus and minus 15V dc to be illuminated. A failure in the POWER indicator to be illuminated could, therefore, indicate a problem in the power supply. Before replacing the power supply, refer to paragraph 5.5.2.1.

5.5.2.3 IF Amplifier MONITOR Output. The output at the IF MONITOR port, which is normally 70 MHz and -5 dBm ±0.5 dB can be measured with a spectrum analyzer or a power meter.

5.5.2.4 Audio Output Levels. Check the program audio output with an audio level meter or high impedance headphones connected to the appropriate rear-panel terminals (figure 5-1). For normal, fluctuating audio material, the meter should show frequent peaks of about 0 dBm.

5.6 TROUBLESHOOTING

The troubleshooting procedures covered in this section are provided in the same sequence as the module detail discussion in paragraphs 4.3.1 through 4.3.12. The engineer or technician performing troubleshooting on the receiver should thoroughly review the preceding paragraphs for the appropriate theory of operation before attempting troubleshooting on any module or printed-wiring board. In addition, the schematic diagrams referenced in the preceding paragraphs should be referred to while troubleshooting the receiver.

5.6.1 AC POWER SUPPLY A1

WARNING

LETHAL LINE VOLTAGE (115V AC) EXISTS AT EXPOSED TERMINALS IN THE POWER SUPPLY WHEN LINE VOLTAGE IS APPLIED AND POWER SUPPLY IS REMOVED FROM THE RECEIVER CHASSIS.

5.6.1.1 Access to the Module. If the tests described in the Module Isolation Guide, paragraph 5.5.2, indicate a faulty power supply, remove (if not already out) the power supply from the receiver chassis by first disconnecting the ac voltage by pulling plug A1P1 from its ac source. Then remove the four screws that secure the heat sink panel to the rear of the receiver chassis. Slowly pull out the power supply chassis until connector A1J1 can be disconnected from the connecting board. Set up the isolated power supply (no loads) on a test bench and reapply ac power.

5.6.1.2 Fault Isolation. Check the proper operation of internal circuits by comparing voltages on semiconductor leads with those specified in table 5-2 (also refer to figure 7-2).

TABLE 5-2. AC POWER SUPPLY SEMICONDUCTOR DC VOLTAGES

Component	Expected Measured dc Voltages (V dc) Emitter	Base	Collector	Pin No.	
Q1 (2N3055)	+15.02	+15.56	+29.7		
Q2 (2N3055)	-29.7	-29.1	-15.15		
Q3 (2N6342)				(1)	0
				(2)	+29.7
				(3)	0
Q4 (2N6342)				(1)	0
				(2)	-29.7
				(3)	0
Q5 (2N3947)	-28.8	-28.2	-15.78		
Q6 (2N4036)	-15.15	-15.77	-29.1		
Q7 (2N3251)	-15.14	-14.04	-15.78		
Q8 (2N3251)	0	-0.65	-13.70		
U2 (UA723DC)				(1)	0
				(2)	+13.92
				(3)	+15.01
				(4)	+ 7.15
				(5)	+ 7.15
				(6)	+ 7.15
				(7)	0
				(8)	0
				(9)	+ 8.97
				(10)	+15.56
				(11)	+29.7
				(12)	+29.7
				(13)	+16.83
				(14)	0

NOTE

All dc voltages in table 5-2 are from leads to ground, with 115V rms ac input and no load on outputs. Expect most voltages to vary ±5 to ±10 percent. Raw dc voltage ripple on both supplies under no load and 115V rms input is typically less than 30 mV p-p. The power supply +15V and -15V adjusts were set at the factory for +15.00V and -15.00V outputs under 1-ampere loads and will be slightly higher in magnitude with no loads on outputs.

Remember that the -15V adjust string for the negative supply is connected between the positive and negative outputs so the magnitude of the negative output tracks changes in the magnitude of the positive output. Because of this, a problem only in the positive supply may produce indications of a problem in the negative supply which is not there. For example, if the positive output goes to a zero or overvoltage condition, the negative output (of a properly operating negative supply) will go to a zero or overvoltage condition, respectively. Because of this, make sure that the positive supply is operating properly before troubleshooting a possible fault in the negative supply.

The overvoltage protection circuits can also hinder the isolation of a fault. If one of the overvoltage fuses F2 or F3 is open, indicating that an overvoltage condition has occurred, first (with ac power disconnected) unsolder and lift one end of the appropriate zener diode (CR1 or CR2) off the printed-wiring board before replacing the fuse and continuing the troubleshooting procedure. This will disable the overvoltage circuit. Do not try disabling the circuit by shorting out the fuse. Shorting out a fuse may cause serious additional power supply damage.

CAUTION

Do not disable the overvoltage circuits with the power supply in and connected to the receiver. Possible resulting overvoltage outputs could damage circuits in other receiver modules and printed-wiring boards.

5.6.2 MODEL 6601 DOWNCONVERTER

Prior to attempting to service the Model 6601 downconverter, paragraph 4.2.2 should be carefully read. A spectrum analyzer capable of tuning from 50 to 4200 MHz is required. If access to a satellite signal in the 3700 to 4200 MHz band isn't available, a signal generator in that frequency band is required. All of the downconverter interconnecting cables utilize SMA connectors. A short, flexible cable with SMA male connectors and appropriate adaptors for interfacing with test equipment is useful.

The first step of downconverter servicing is fault isolation. The overall function of the downconverter is to convert the desired signal in the 3700- to 4200-MHz band to 70 MHz with a conversion gain of 18 to 22 dB. The conversion gain is not critical, but a downconverter component failure will usually result in a conversion gain significantly less than 18 dB or conversion of the wrong channel to 70 MHz. Normal or near normal gain with conversion of the wrong channel is usually indicative of a First LO failure. A loss of conversion gain is usually the result of a failure in the integrated microwave converter, discrete microwave components, or the second converter.

Block diagrams for the Model 6601 downconverters are given in figures 4-3 and 4-4. Gains and losses are indicated on these figures for the various components within the downconverter. The level of a channel in the 3700- to 4200-MHz band is observed with the spectrum analyzer at the downconverter input. The signal is then traced through the downconverter with frequency and level shifts as indicated on the appropriate block diagram. The frequency and output level of the First LO or Agile LO should also be checked. Tolerances of approximately ± 1 dB in each of the active assemblies should be anticipated. As interconnecting cables are removed to facilitate signal tracing, each connector should be visually inspected for integrity.

5.6.2.1 First Local Oscillator. The following steps outline the recommended troubleshooting procedures for the Model 6601 First LO:

a. Test Equipment Required:

   Volt-ohmmeter
   100-MHz oscilloscope
   ± 15V dc at 300 mA power supply
   3880 MHz Model 6601 crystal
   (S-A #229348)

b. First LO basic functions: The First LO consists of the seven basic functions given in table 5-3 (refer to the First LO block diagram, figure 4-5).

TABLE 5-3. MODEL 6601 FIRST LO BASIC FUNCTIONS

Function	Active Components
+6.8V dc Supply	U4
+5V dc Supply	CR1
Loop Amplifier	U2
Voltage-Controlled Oscillator	Q2, CR2, CR3
Reference Oscillator	Q1
Phase Comparator	U1
Divide-by-64	U3

The first four functions listed in table 5-3 may be partially checked by using the dc voltage and current table 5-4 with a 11.71875-MHz (3880 MHz) crystal installed into the First LO crystal socket.

TABLE 5-4. MODEL 6601 FIRST LO TEST VOLTAGE AND CURRENT CHART

Test Location	Nominal Reading
Across R3	+1.65V dc
Q2 emitter to ground	-9.5V dc
U2 pin 6 to ground	+5.4V dc
CR1 cathode to ground	+4.9V dc
U4 pin 2 to ground	+6.8V dc
U4 pin 1 to ground	+9.6V dc
-15V dc input current	72 mA
+15V dc input current	220 mA

The last three functions listed in tabe 5-3 may be checked with an oscilloscope using the typical waveform charts shown in figures 5-3, 5-4, and 5-5.

Common Point R5, R6
Vertical .2V/div.
Horz .05 μS/div
Center 3.4V dc

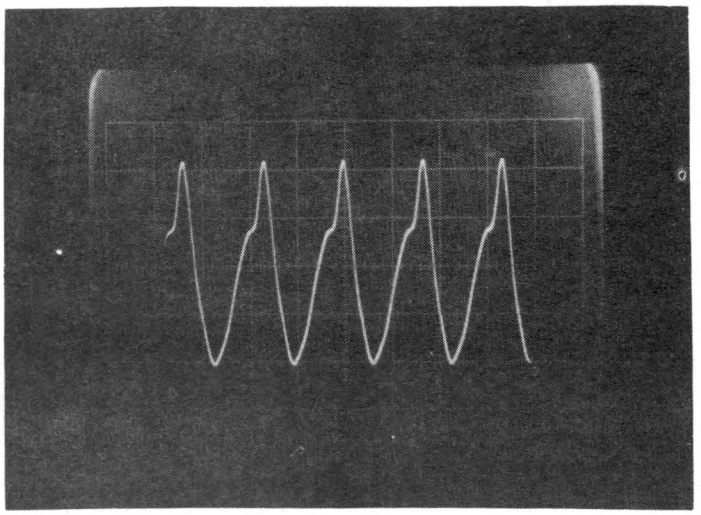


Figure 5-3. Model 6601 First LO Reference Oscillator Circuit Typical Waveform

U3 Pin 4
Vertical 1V/div
Horz .05 μS/div
Center 0V dc

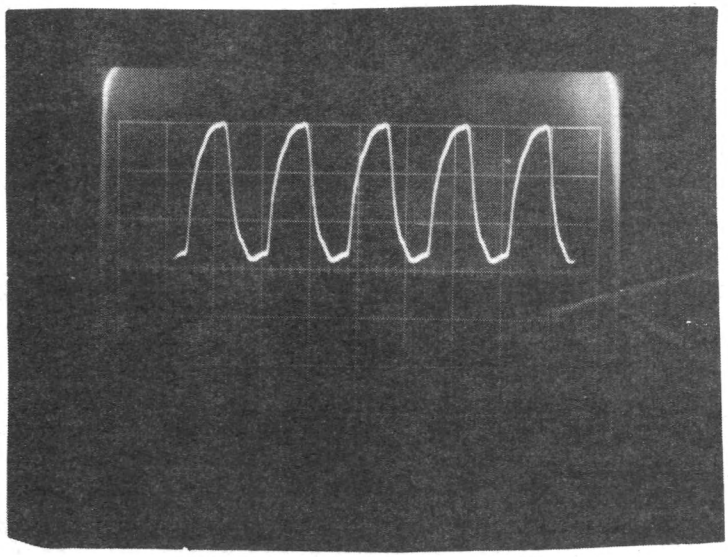


Figure 5-4. Model 6601 First LO Divide-by-64 Circuit Typical Waveform

U1 Pin 3
Vertical .1V/div
Horz .05 μS/div
Center 3.7V dc

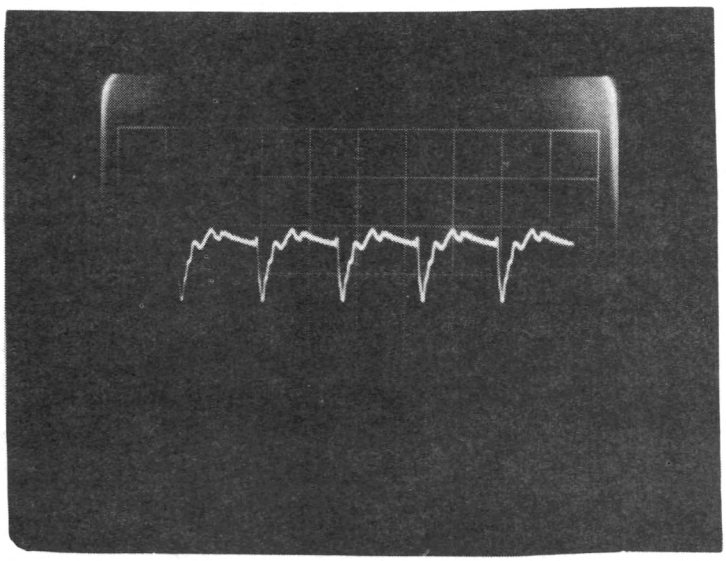


Figure 5-5. Model 6601 First LO Phase Comparator Circuit Typical Waveform

c. First LO fault isolation procedure: The most common fault symptoms and recommendation for troubleshooting are given in table 5-5.

TABLE 5-5. MODEL 6601 FIRST LO FAULT ISOLATION

Symptom	Recommendation
No Output	Check Q2 emitter voltage
No Output and Reference Oscillator not working	Check for -15V dc
Reference Oscillator not working	Check voltage across R3
Output Level is approximately correct, but doesn't lock to Crystal	Check +6.8-volt dc supply; Check +5.0-volt dc supply; Check reference oscillator waveform; check divide-by-64 waveform; check phase comparator waveform

5.6.2.2 Second Converter. In the event the signal tracing procedure of paragraph 5.6.2 indicates a second converter failure, the second converter should be returned to Scientific-Atlanta for service.

5.6.3 MODELS 6602 AND 6603 DOWNCONVERTERS

Much of the discussion of troubleshooting the Model 6601 downconverter is applicable to the Models 6602 and 6603 downconverters. The microwave converter components and second converter are identical. The output level and frequency range of the First LO in the Model 6601 are identical to the Models 6602 and 6603.

In the event the output frequency range of the Agile LO is incorrect, it must be determined whether the interface logic board or the Agile LO has failed. If the required programmable divide ratio command to E1 through E6 (see paragraph 4.2.3.1) on the Agile LO is correct but the Agile LO output is the wrong frequency, the failure is in the Agile LO. Otherwise, the problem is probably associated with the interface logic board. Refer to paragraphs 5.6.3.1 and 5.6.3.2.

5.6.3.1 Agile Local Oscillator Assembly. Remove the Agile LO from the downconverter and remove the top and bottom covers. Keep the top cover handy since it has the E designators silkscreened. With the Agile LO external to the downconverter chassis, reconnect the wire cable (see note) to the interface logic board. Tune the downconverter to 3880 MHz.

CAUTION

Reconnect the wire cable with the same orientation it had prior to disconnect.

Table 5-6 lists the nominal dc voltages which should be used in troubleshooting the Agile LO. The item numbers in table 5-6 are referenced in the text which follows. The voltages of items 1 through 9 are dc supply voltages and may be used to check power distribution. Item 10, the voltage across R3, may be used to check the bias of transistor Q1. Item 11, the emitter voltage of transistor Q2, may be used to check the bias of transistor Q2. Item 12, the output of U4 which tunes the varactors of the VCO, will almost certainly be incorrect unless the Agile LO output is locked on the correct frequency. Each of these points of the circuit are decoupled and a VOM or digital voltmeter may be used to make the measurements.

TABLE 5-6. AGILE LO DC VOLTAGE CHART

Item No.	Location	Nominal Vdc (Note 1)
1, 2, 3	U1, U2, & U3, pin 14	+5.0
4, 5, 6	U5, U6, & U7, pin 16	+5.0
7	U8 pin 14	+6.8
8	U4 pin 7	+15
9	U4 pin 4	-15
10	Across R3	+1.4
11	L7-R26 Common Node	+8.8
12	U4 pin 6	+6.5

NOTES: 1. All voltages are referenced to ground unless otherwise specified.

2. Voltage tolerances: items 1 through 9: ±5%; items 10 and 11: ±10%; and item 12: ±20%.

In the event that the dc voltage measurements items 1 through 11 of table 5-6 check correctly, and the Agile LO level is normal, but the frequency is incorrect (see paragraph 5.6.2); the following procedures should be used. A triggerable oscilloscope with at least a 50-MHz bandwidth will be required. The probe should be a low capacity (15 pF or less) X10 type. Table 5-7 lists the waveforms that may be used to check the various Agile LO functions, with the Agile LO tuned to 3880 MHz.

TABLE 5-7. AGILE LO FUNCTIONS AND WAVEFORMS

Function	Waveform Figure Number
Reference Oscillator, Q1	5-6
Reference ÷ 4, U1	5-7
Reference ÷ 16, U2 (÷64 total)	5-8
÷ 64 Prescaler	5-9
Programmable Divider	5-10, 5-11, 5-12

Each waveform has a horizontal scale of 1 μs/cm, vertical scale of 1V/cm, and vertical center of +2V dc. Since the Agile Lo is a closed loop, caution must be excised when using the waveforms literally.

If the Agile LO output level is much below +10 dBm, the VCO, Q2, and associated components, should be checked. Table 5-6, item 11, may be used to verify correct bias of Q2.

5.6.3.2 Interface Logic Board. Remove the interface logic board from the downconverter assembly, leaving the frequency select switch and LED's attached to the board. Remove all connectors (see note) except J3, which supplies power to the board.

CAUTION

Note orientation of all connectors so they can be properly reconnected.

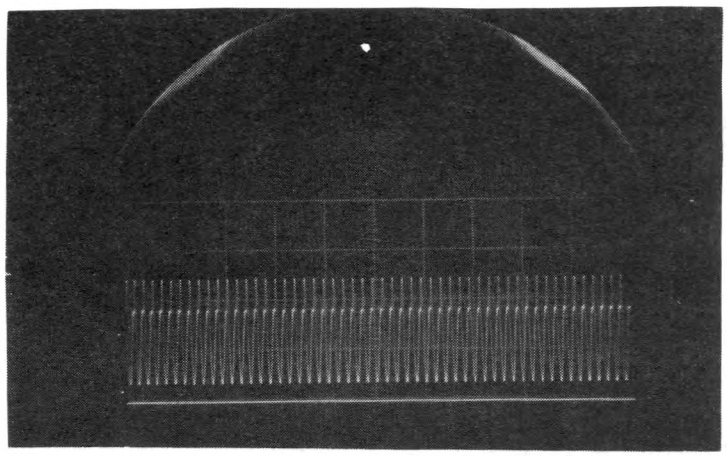


Figure 5-6. Reference Oscillator Output, U1 Pin 3

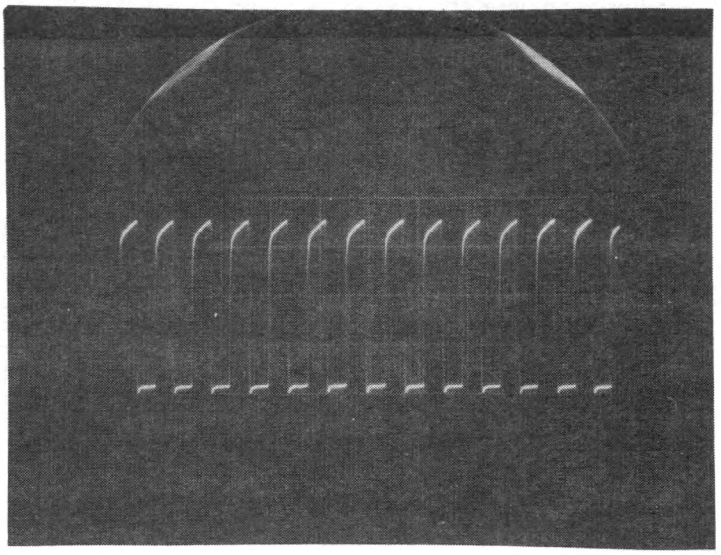


Figure 5-7. Reference Chain ÷ 4 Output, U1 Pin 8

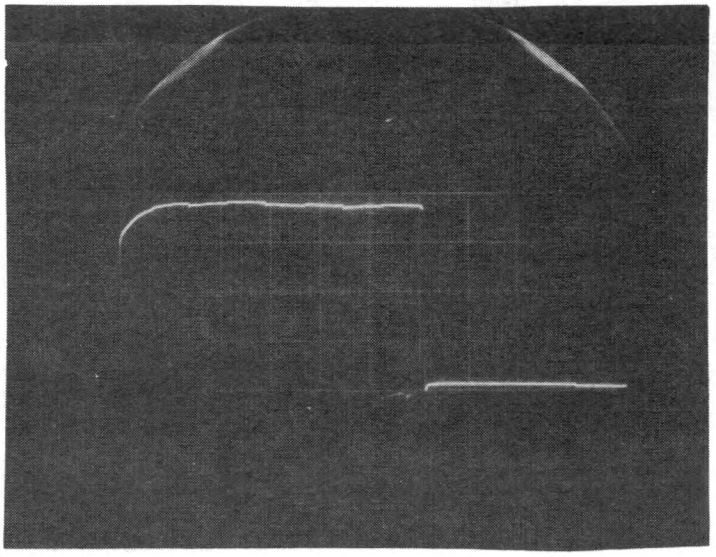


Figure 5-8. Reference Chain ÷ 64 Output, U2 Pin 8

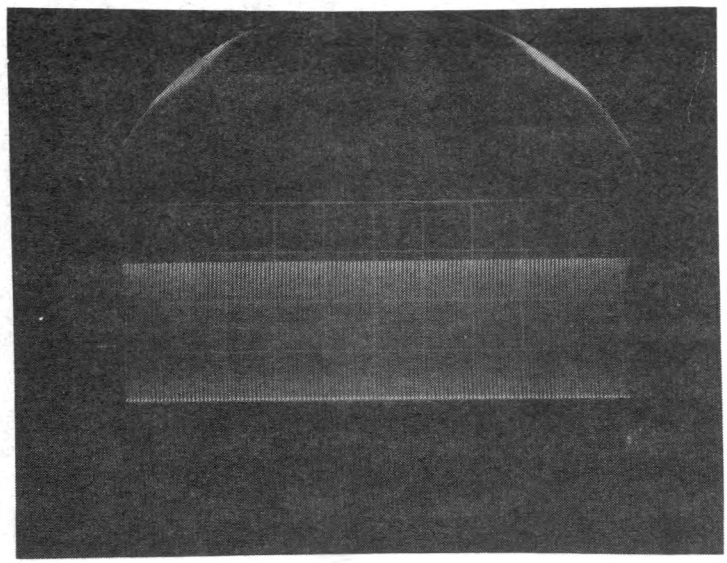


Figure 5-9. ÷ 64 Prescaler Output, U8 Pin 4

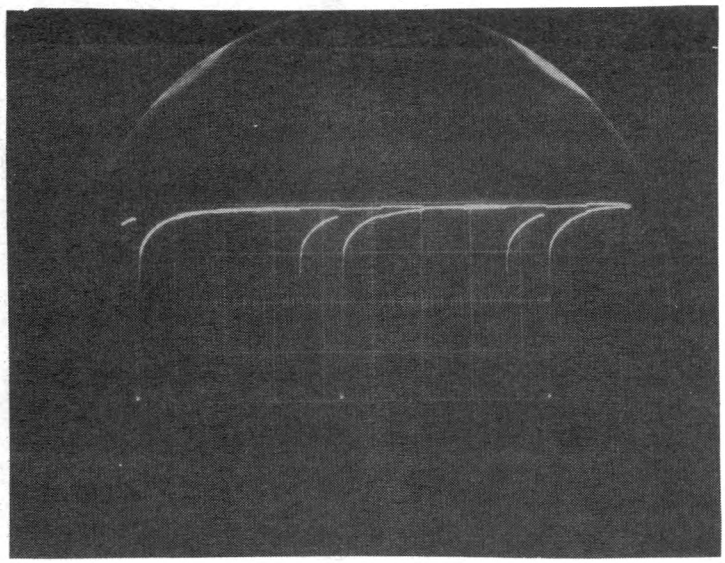


Figure 5-10. Programmable Divider "Tens Digit" Terminal Count, U6 Pin 15

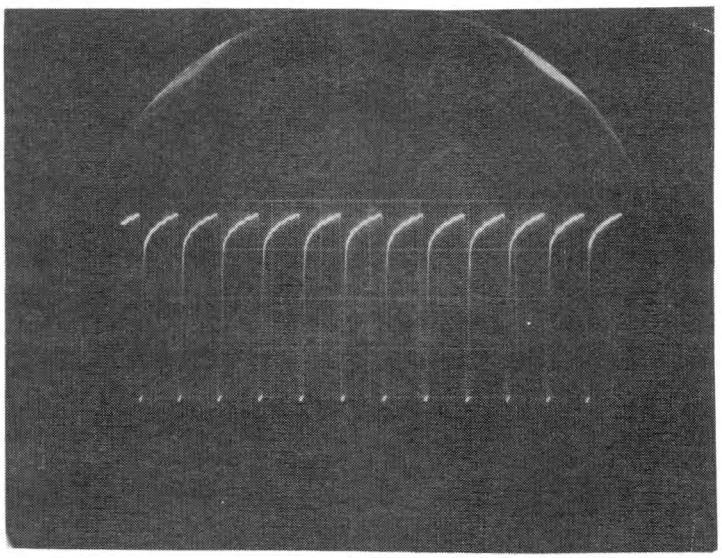


Figure 5-11. Programmable Divider "Units Digit" Terminal Count, U7 Pin 15

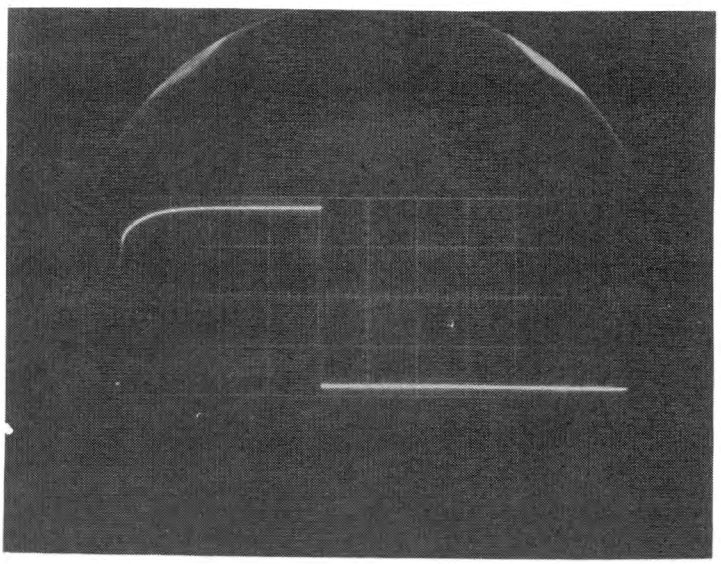


Figure 5-12. Programmable Divider Output, U5 Pin 14

The recommended test equipment for checking the voltages specified for the interface logic board is a Hewlett-Packard digital voltmeter Model 3465, or equivalent. The troubleshooting procedures for the interface logic board discusses the malfunction symptoms listed in the following paragraphs:

a. Relay Driver Bad

For troubleshooting the relay driver, connect connector J1 to the interface logic board, and connect a relay to the back of the downconverter. Check the voltage levels at pin 8 of J1 (also the collector of transistor Q5). The level should alternate between -0.2V and -15V dc for adjacent frequency settings. Turn the Frequency Select switch on the front of the downconverter to check for this operation. If the level ever reads between -1V and -14.5V dc, it is not operating properly.

Check the base of transistor Q3. If the base of Q3 is at a logic high level (+4V to +5V dc), then transistor Q5 should be cut off; the voltage level at the collector of Q5 should be between -14.5V to -15V dc. If the base of Q3 is at a logic low level, transistor Q5 should be saturated; then the voltage at the collector of Q5 should be at approximately -0.2V dc.

1. Q3 base at logic high level:

(a) Check the emitter of Q3 for a voltage between +3.5V and +4.5V dc. Check for +15V dc at the collector of Q3.

(b) Check the base of Q5 for a positive voltage; if it is positive and the collector voltage of Q5 is not between -14V and -15V dc, replace transistor Q5. If the base voltage of Q5 isn't positive, replace transistor Q4.

2. Q3 base at logic low level:

(a) Check the emitter of Q3 for 0 volts; if it is a positive voltage (greater than +0.5 volts), replace transistor Q3. If the emitter voltage is negative (less than -1 volt), replace transistor Q3.

(b) Check the base of Q5 for a voltage of approximately -0.7V dc; if it is at this level and the collector voltage of Q5 is not between 0 and -1V dc, replace transistor Q5.

b. Power Supply Bad

First check the ±15 volt supply coming onto the interface logic board at connector J3, pins 6 and 7. If these voltages are incorrect, then the problem could be with the power supply.

Check for a voltage of +6.8V dc at pin 2 of the 4-pin bat-wing voltage regulator (74MGT2C). The voltage can be between +6.7V to +7.1V dc.

Check the 5.1-volt supply at zener diode CR1 (1N4733A). The voltage can be between +4.9V and +5.3V dc.

1. 6.8-volt check at voltage regulator is bad:

Check the voltage at each end of resistor R1 (18 ohms, 2W). One side should be +15V dc, the other side should be a minimum of +9V dc. If there is more than a 6-volt drop across R1, something is drawing too much current. Check the voltage drop across resistor R4 (10 ohms, 1W); if it is more than +1.8V dc, then the problem is with the 5-volt supply; otherwise, check the LED drivers and the 6.8-volt lines for shorts.

If the level at pin 1 of the voltage regulator is at least 9 volts, but the 6.8-volt supply is not correct, check the values of resistors R2 and R3. Pin 4 of the voltage regulator should be grounded, and the voltage at pin 3 should be +5V dc. If this is not the case, replace the voltage regulator.

2. 5-volt level is bad:

Check R4; it should be a 10-ohm, 1-Watt resistor. Resistor R4 should show a voltage drop of 1.8V dc.

If the 5-volt level is too low, something is probably drawing too much current. Look for solder bridges on the 5-volt lines. Lift out the IC's one at a time to determine if there is a faulty one.

If the 5-volt level is too low, something is probably drawing too much current. Look for solder bridges on the 5-volt lines. Lift out the IC's one at a time to determine if there is a faulty one.

If the 5-volt level is just a little off, it could be because the zener diode is out of specifications and needs to be replaced.

c. Remote Code Checkout

1. Program input remote frequency 4140 MHz through J1:

To place the interface logic board in the remote mode, pin 7 of J1 should be grounded. This should cause the yellow REMOTE LED indicator to illuminate. To program the frequency (4140 MHz), a ground should be provided at pins 2, 3, 4, and 6 of connector J1. The code conversion can be traced through integrated circuits U1 through U5, according to logic high (H) and logic low (L) levels provided in table 5-8.

2. Program input remote frequency 3820 MHz through J1:

   To check another code, frequency 3820 MHz requires a ground at pins 4 and 7 of connector J1. Table 5-9 shows the logic states that integrated circuits U1 through U5 should be in for this remote code.

3. Program input remote frequency 3780 MHz through J1:

   To check the code for frequency 3780 MHz, observe that pins 1 through 7 on connector J1 are grounded. Table 5-10 shows the logic states that integrated circuits U1 through U6 should be in for this remote code.

d. Local Code Checkout

To check local code operation, remove the ground from pin 7 of connector J1. This should cause the yellow REMOTE LED indicator to extinguish. Local codes do not have to be converted. The code is applied to integrated circuits U4 and U5, and is sent to the Agile LO through connector J2. Check that the code applied to U4, pins 7, 5, 3, and 1 is present also at pins 10, 11, 12, and 13, respectively, and that the code applied to U5, pins 7 and 5, is also at pins 10 and 11, respectively.

e. REMOTE LED (yellow) Indicator Does Not Illuminate

If the code output is correct (refer to part c. of this paragraph), then the problem is probably with the LED indicator, or the driver, consisting of R27, Q1, R28, and CR38.

Check for the following conditions:

Pin 9 of U4 and U5 are at a logic high level (approximately +4.51V dc)

Base of Q1 is at approximately +0.7V dc

Emitter of Q1 is grounded

Collector of Q1 is at approximately +0.2V dc

One side of R28 is at +6.8V dc

If the code conversion is correct, check the operation of integrated circuits U6, U7, U8, and the driver circuit consisting of R29, Q2, R30, and CR39. If pin 13 of U8 is at a logic level high, then the problem is with the driver circuit. The base of Q2 should be at approximately +0.7V dc, and the collector at +0.2V dc.

Integrated circuits U6 and U7 are exclusive-OR gates comparing the code on the remote line to the code on the local switch. If the two codes are the same, the output of each gate will be a logic level low and when inputted to U8, the output of U8 will go to a logic level high. This causes the REMOTE frequency LED to extinguish.

5.6.3.3 Interface Board. For troubleshooting the Interface Board, refer to paragraphs a and b of section 5.6.3.2. Paragraphs c, d, and e are not applicable since these portions of the interface logic board are not present on the interface board.

5.6.3.4 Second Converter. In the event the signal tracing procedure of paragraph 5.6.3 indicates a second converter failure, the second converter should be returned to Scientific-Atlanta for service.

5.6.4 INTERCONNECTING BOARD A3

No specific maintenance is necessary. In the case of difficulty with this board, refer to the schematic diagram, figure 7-17, and check the continuity with a VOM or multimeter.

5.6.5 CONNECTOR BOARD A4

No specific maintenance is necessary. In the case of difficulty with this board, refer to the schematic diagram, figure 7-19, and check the continuity with a VOM or multimeter.

5.6.6 IF AMPLIFIER A5

Knowledge and understanding of the theory of operation given in 4.2.5 and 4.3.6 and the IF amplifier drawings (figures 7-21 and 7-22) will greatly help in isolating an internal faulty component.

TABLE 5-8. REMOTE FREQUENCY 4140 MHz LOGIC LEVEL STATES

IC Pin No.	IC Logic Level State U1	U2	U3	U4	U5
1	H	L	H	X	L
2	H	H	L	L	L
3	L	H	L	X	L
4	L	L	L	H	H
5	H	L	H	X	X
6	H	H	H	L	L
7	L	H	H	X	X
8	L	L	L	L	L
9	L	L	L	H	H
10	H	L	X	L	L
11	L	H	L	H	H
12	H	L	H	L	X
13	X	L	X	L	X
14	H	X	X	L	L
15	L	H	H	L	L
16	X	H	H	H	H

NOTES: H Refers to logic high level (+4V to +5V dc)
L Refers to logic low level (-1V to 0V dc)
X Refers to "don't care" logic state

TABLE 5-9. REMOTE FREQUENCY 3820 MHz LOGIC LEVEL STATES

IC Pin No.	IC Logic Level State U1	U2	U3	U4	U5
1	H	L	H	X	L
2	L	L	L	H	L
3	H	H	L	X	L
4	L	H	L	H	L
5	H	L	L	X	X
6	H	L	L	L	L
7	L	L	L	X	X
8	L	L	L	L	L
9	H	L	L	H	H
10	L	L	X	L	L
11	H	H	L	H	L
12	L	H	L	H	X
13	X	L	X	L	X
14	H	X	X	L	L
15	L	L	H	L	L
16	X	H	H	H	H

NOTES: H Refers to logic high level (+4V to +5V dc)
L Refers to logic low level (-1V to 0V dc)
X Refers to "don't care" logic state

TABLE 5-10. REMOTE FREQUENCY 3780 MHz LOGIC LEVEL STATES

IC Pin No.	IC Logic Level State U1	U2	U3	U4	U5	U6
1	H	L	L	X	L	L
2	H	H	L	H	L	X
3	L	H	H	X	L	X
4	H	L	L	L	L	X
5	L	H	H	X	X	L
6	H	H	H	L	L	X
7	L	H	H	X	X	L
8	L	L	L	L	L	H
9	L	L	L	H	H	X
10	H	L	X	L	L	X
11	L	L	L	L	L	H
12	H	H	L	H	X	L
13	X	L	X	L	X	H
14	L	X	X	L	L	H
15	H	H	H	L	L	X
16	X	H	H	H	H	X

NOTES: H Refers to logic high level (+4V to +5V dc)
L Refers to logic low level (-1V to 0V dc)
X Refers to "don't care" logic state

5.6.6.1 Access to the IF Amplifier Card A5. If the tests described in the Module Isolation Guide, paragraph 5.5.2, indicate a faulty IF amplifier card, turn the power supply off (ac switch at the rear of the receiver chassis). Remove the top and bottom covers on the receiver chassis. Inspect for defects in the input and output cables and printed-wiring board connector solder joints on the interconnecting board. If no defects are detected, remove the IF amplifier card and reconnect the card on the top of the large extender card inserted in the IF amplifier's card cage location. Turn the power supply back on and continue troubleshooting procedures on the exposed card.

5.6.6.2 IF Amplifier Fault Isolation. The following measurements can help to isolate an IF amplifier internal failure. Unless otherwise specified, the dc voltage levels are measured with respect to chassis ground. To minimize the possibility of rectification of IF signals in the test dc meter and also possible IF signal feedback (due to test leads) causing shifts in dc bias levels, disconnect the IF input jumper cable at the rear of the receiver and remove all plug-in straps E1 through E5.

NOTE

When reinstalling plug-in straps be sure that all are in the position for interstage through-connection as shown in the IF amplifier PWB assembly, figure 7-22.

First Voltage Checks

The typical dc voltage levels given in table 5-11 are a check on the distribution of positive and negative voltages on the card and that all zener diodes are functioning properly.

Tolerance on the first two voltages in table 5-11 is typically ±5 percent; the last four voltages typically vary ±0.25V dc.

Attenuator Circuits

To check the proper operation of the attenuator circuits, set the SELECT switch S1 to the MGC position. Adjust MGC potentiometer R124 for a dc voltage level of 1.00V dc at node L38 - 161. Check for the typical levels at the points given in table 5-12.

TABLE 5-11. IF AMPLIFIER FIRST VOLTAGE CHECKS

Node Point	Voltage (V dc)
L3 - R94	+13.7
L37 - R158	-14.9
R25 - CR4	+6.8
CR12 - R119	+6.2
CR13 - R128	-6.2
CR18 - R149	-6.2

TABLE 5-12. IF AMPLIFIER ATTENUATOR TYPICAL VOLTAGES

Node Point	Voltage (V dc)
L38 - R161	+1.00 (set)
L1 - CR3	+3.53
CR1 - R9	+2.81
CR2 - R12	+2.81
CR3 - R10	+2.78
L10 - CR8	+3.52
CR6 - R35	+2.81
CR7 - R38	+2.81
CR8 - R36	+2.78

Component	Expected Measured dc Voltage (V dc) Emitter	Base	Collector	Pin No.
Q5 (2N3251)	+7.57	+6.84	+3.82	
Q21 (2N3947)	-2.21	-2.33	0	
Q22 (2N3947)	-2.21	-3.27	0	
Q23 (2N3251)	+1.00	+0.37	-12.49	
U3 (Dual 741)				(1) - 2.21 (2) 0 (3) 0 (4) -14.54 (5) - 2.21 (6) - 2.21 (7) +0.33 (8) +13.73

Tolerance on all voltages given in table 5-12 is typically ±5 percent. Within a given board, like points in PIN attenuator sections are usually matched within 0.02V.

Active IF Amplifier

Typical dc bias voltages for the active IF amplifier 2N5179 transistors are given in table 5-13.

TABLE 5-13. IF AMPLIFIER TRANSISTOR (2N5179) DC VOLTAGES

Transistor Reference Designation	Expected Measured dc Voltages (V dc) Emitter	Base	Collector
Q1	0	0.75	6.74
Q2	5.96	6.73	10.69
Q3	0	0.75	6.09
Q4	5.31	6.08	10.17
Q6	0	0.75	6.70
Q7	5.94	6.69	10.69
Q8	0	0.75	6.04
Q9	5.28	6.03	10.25
Q10	0	0.75	6.79
Q11	6.02	6.78	10.13
Q12	0	0.75	5.95
Q13	5.20	5.94	10.45
Q14	0	0.75	6.70
Q15	5.94	6.69	10.31
Q16	0	0.75	6.07
Q17	5.31	6.06	10.49
Q18	0	0.75	6.70
Q19	5.94	6.69	11.03
Q20	5.21	5.95	11.92

Note

All voltages given in table 5-13 are positive. Tolerance on all voltages is typically ±5 percent.

AGC Level Detector

With the SELECT switch S1 in the MGC position and no input IF signal, the AGC Level Detector voltage check should be as given in table 5-14 (within ±5 percent).

TABLE 5-14. IF AMPLIFIER AGC LEVEL DETECTOR VOLTAGES

Integrated Circuit U2 (741) Pin No.	Voltage (V dc)
1	-14.80
2	- 0.20
3	- 0.20
4	-14.81
5	-14.80
6	0
7	+14.40
8	0

AGC Loop Filter and C/N Buffer

Adjust both MGC potentiometer R124 and ZERO-ON-NOISE potentiometer R130 fully clockwise. Set the SELECT switch S1 to the MGC position. Check the voltage of U2A and U2B for the values given in table 5-15 (within ±5 percent).

TABLE 5-15. IF AMPLIFIER AGC LOOP AND C/N BUFFER TEST

Integrated Circuit U2 (741) Pin No.	Voltage (V dc)
1	0
2	0
3	0
4	-14.57
5	0
6	+ 0.15
7	-12.40 (NOTE)
8	+14.16

NOTE

U2B integrator is in a saturated negative output condition.

IF Gains

Typical IF gains are given in table 5-16.

TABLE 5-16. IF AMPLIFIER TYPICAL GAINS

Measurement Points From	To	Gain (dB)
TP5	P1-14	12.5 ±0.8
TP4	P1-14	16.7 ±1.2
TP3	P1-14	20.2 ±1.6
TP2	P1-14	24.5 ±2.0
TP1	P1-14	28.0 ±2.4
P2-14	TP1	20.0 ±2.4 (NOTE)

NOTE

SELECT switch S1 is in MGC position. MGC potentiometer R124 is set to maximum clockwise position (0 volts). AGC offset potentiometer R125 is set for maximum MGC IF gain from P2-14 to P1-14 of 48 dB (normal factory adjustment).

5.6.7 VIDEO DEMODULATOR A6

Alignment of the video demodulator board A6 is very difficult and should normally not be attempted in the field. Test equipment and training to a high degree are necessary for setting linearity and proper threshold extension operation. However, a few simple checks will be given in this section which may help to isolate a problem to a part failure. In an emergency, part replacement can be attempted (refer to figures 7-23 and 7-24 for the schematic diagram and assembly drawing, respectively, of the video demodulator).

5.6.7.1 Transistors Q1 and Q2. The emitter of Q2 should be at or near -7.5V dc. If this voltage is not present, check Q1 and Q2, and associated bias resistors.

5.6.7.2 Integrated Circuit U2. Check the voltage present on the anode of diode CR3; this voltage should be at or near -5V dc, as set by zener diode CR3 and resistor R19. If U2 is the suspect, observe the signal at pin 5 of U2 with a 100-MHz oscilloscope. With the IF signal supplied, the oscilloscope should show a waveform greater than 1-volt peak-to-peak of IF. Adjustment of potentiometer R24 is not recommended in the field.

5.6.7.3 Transistor Q3. The emitter of Q3 should be near -7V dc. Check the base-to-emitter drop for approximately 0.6V dc, if the emitter voltage is not near -7V dc.

5.6.7.4 Transistors Q4 and Q5. Check the emitter of Q5 for approximately -7.5V dc. If this voltage is not present, check Q4 and Q5, and associated bias resistors.

5.6.7.5 Transistors Q8 and Q9. Check the emitters of Q8 and Q9 for a voltage of approximately -7V dc. If either emitter is at or near -15V dc, replace the transistor.

5.6.7.6 Transistors Q10 and Q11. Check the emitters of Q10 and Q11 for a voltage near -0.6V dc. If this voltage is not present, check the base voltages for 0 volts. If the base voltages of the transistors are at -1V dc or lower, replace the transistors.

5.6.7.7 Transistors Q12, Q13, and Q14. Check the emitter voltage of Q14 for a dc level near 0 volts (±0.5 volts). If this voltage is not present, measure the base-to-emitter voltage drop on Q12, Q13, and Q14, and check the associated bias resistors. Also, check the base of Q12 for approximately -0.6V dc. This input level is set by the base-to-emitter voltage drops of Q10 and Q11.

5.6.7.8 Transistors Q15, Q16, and Q17. Check the emitter of Q17 for a dc level of near 0 volts (±0.5 volts). If this voltage is not present, measure the base-to-emitter voltage on Q15, Q16, and Q17, and check the associated bias resistors. Also, check the base of Q15 for approximately -0.6V dc, as set by diode CR9 and resistor R92.

5.6.7.9 Transistors Q6 and Q7. Check the dc level at the cathode of diode CR6 for approximately +5.5 volts. If this voltage is not present, check Q6 and Q7, and associated bias resistors.

5.6.7.10 Integrated Circuit U1. Vary the C/N bus by the adjustment of the ZERO-ON-NOISE control on the front panel of the receiver. Observe the cathode voltage of either diode CR1 or CR2. When the C/N meter drops below 14 dB the cathode voltages of diodes CR1 and CR2 should swing negative approximately 8 volts. When the C/N meter indicates above 14 dB, the cathode voltage of diodes CR1 and CR2 should be approximately +13V dc. If this voltage is off from this value, try adjustment of potentiometer R2. If no switching takes place, try replacement of U1.

As stated previously, adjustment of the video demodulator is not recommended in the field. However, if proper 1.5 dB improvement with threshold extension (TED) is not realized, verify that the TED is in by checking at the cathode of diodes CR1 or CR2. Adjust potentiometer R58 back and forth slightly while observing a video picture at or near threshold. A definite variation in picture quality should be seen. Leave potentiometer R58 set for the best improvement. Now rock potentiometer R54 back and forth slightly. Again, variation in picture quality should be realized and R54 should be left in the position of best improvement.

Further adjustment of the video demodulator is not recommended. Consult the factory if assistance is needed.

5.6.8 VIDEO CLAMP A7

Trouble with the video clamp module is indicated if no video output is obtained from the receiver and yet video output is obtained on the composite video output point on the rear of the receiver. Before beginning troubleshooting, check to make sure that the signal is available on the COMPOSITE BB OUT connector on the rear of the receiver. If the signal is not present at that point, trouble is indicated in the video demodulator or preceding circuitry. If a signal is present on the composite output point but is not present on either of the video outputs, then trouble is indicated in the video clamp module. An oscilloscope is necessary for effective troubleshooting of this module. Place the video clamp module on an extender board, available from Scientific-Atlanta. Begin troubleshooting by verifying the presence of the video signal on plug P2, pin 3, on the printed-wiring board. Plug P2 is the further right of the two connectors on the video clamp as the receiver is viewed from the front. Pin 1 is on the left side of this connector, with pin 12 on the right side as indicated on the printed-wiring board.

The physically lower end of resistor R6 located above this connector may also be used as the test point. Verify with the oscilloscope that a video signal exists at this point. If it does not, the problem is most likely in transistor Q1 or associated components; the problem may also be in the lowpass filter and delay equalizer, consisting of inductors L1 through L5 and associated components. If the video signal is present on P2, pin 3, then the most likely problem is with the video amplifier, consisting of integrated circuit U1 and transistors Q2 through Q5. This circuit should be tested by checking the voltages on it against those shown in tables 5-17 and 5-18.

If the video output waveform is present but the dispersal waveform has not been removed, this indicates trouble either in the sync separator circuit or in the feedback circuit used to reject the dispersal waveform. Begin troubleshooting by verifying a signal on the gate of transistor Q6. This point may be most easily probed by looking at either end of resistor R41 located to the right of a blank area of the printed-wiring board, as the printed-wiring board is viewed from the component side with the connectors down. The blank area is about two-thirds of the way toward the top of the printed-wiring board and just to the right of the center of the printed-wiring board. Verify that the signal on either end of resistor R41 is a square wave with the positive portion of the square wave occurring simultaneously with the synchronization pulses and the negative portion of the square wave going to approximately 15V. If this waveform is present on resistor R41 and yet the dispersal waveform is not being removed, the problem is likely in integrated circuit U2B, integrated circuit U4, or emitter follower Q7. These circuits are best troubleshot by comparing voltages against those shown in tables 5-17 and 5-18.

If the problem with the video clamp is a failure with the sync separator, then while observing the oscilloscope, check pin 2 of integrated circuit U5, located in the top center of the printed-wiring board. The signal at this point should be a square wave which is positive-going during the active portion of the video line. The voltages that the square wave attains are variable, depending on the characteristics of the field-effect transistor in that particular circuit. The absolute voltages are not important because comparator U5 compares against the average voltage at this point. Presence of the rectangular waveform on pin 2 of U5 but absence of the rectangular waveform on pin 7 of U5, indicates trouble with this integrated circuit. If the waveform is not present on pin 2 of the integrated circuit, check the emitter of transistor Q8, located near the lower left of the printed-wiring board, as viewed from the component side with the connectors down. The signal on the emitter of transistor Q8 should be the incoming video signal, possibly somewhat distorted. If this signal is present, and yet the sync separator is not operational, the problem is indicated in transistors Q9 or Q10.

If the problem with the video clamp module is the video alarm out is not functional, yet the module otherwise appears to be functioning correctly, the problem is most likely in integrated circuit U2A or integrated circuit U3. Using the oscilloscope, check for the presence of a 15.75-kHz sine wave on pin 7 of U2. The amplitude of this sine wave will depend on the picture content and the sine wave will appear distorted. If the sine wave exists at this point, and yet nothing is obtained on the video alarm output on pin 1 of U3, then integrated circuit U3 is the probable defective component.

TABLE 5-17. VIDEO CLAMP TRANSISTOR DC VOLTAGES

Transistor Reference Designation	Expected Measured dc Voltages (V dc) Emitter	Base	Collector
Q1	-0.8	-0.15	9.3
Q2	11.9	12.6	14.4
Q3	10.5	9.9	0.1
Q4	-0.6	0.1	14.9
Q5	-0.6	0.1	-14.5
Q6 (FET)	-0.6	-0.6	0
	(Drain)	(Source)	(Gate)
Q7	-0.1	0.5	13.8
Q8	-0.1	-0.8	-13.5
Q9 (FET)	14.8	1.2	- 3.6
	(Drain)	(Source)	(Gate)
Q10	-0.6	-1.3	- 3.7

TABLE 5-18. VIDEO CLAMP INTEGRATED CIRCUIT DC VOLTAGES

Integrated Circuit Reference Designation	Expected Measured dc Voltages (V dc) Pin Number 1	2	3	4	5	6	7	8
U1	-0.2	—	-15	—	-0.2	9.8	0	12.5
U2	0	-0.6	-0.6	-15	0	0	0	15
U3	0	0	0	-15	0	0	0.6	15
U4	0.5	0	0	-15	0	0	0.6	15
U5	-15	-3.7	-4.2	-15	—	—	0	15

NOTE: Indicated voltages were taken using a digital voltmeter with module plugged into extender on 6601 receiver and with video demodulator PWB removed from chassis.

5.6.9 AUDIO DEMODULATOR

The most common mode of failure for an audio demodulator would be the complete loss of output. A secondary failure might be reduction of output level by perhaps 6 dB. In the event of the latter failure mode, check the two sides of the audio output against ground. These may be checked on the audio output connectors on the rear of the receiver. Identical signals should be measured from each side of the balanced output to chassis ground. If the signal fails on one side of the output but not on the other side, then the output level can be expected to drop 6 dB and the problem is most likely with integrated circuit U3A or transistors Q4, Q5, or associated components. On the other hand, if the output of the audio demodulator is lost completely, first verify that video output can be obtained. Simultaneous loss of both video and audio would generally indicate problems in the demodulator printed-wiring board or earlier stages of the receiver.

If a video output signal is present yet the audio has failed, begin by testing the signal line being supplied to the level control potentiometer. In the case of the program audio, this signal is available at the very top of the printed-wiring board as a wiring trace running toward the right as viewed from the front of the receiver. Measure the signal at this point using an ac voltmeter or oscilloscope. Normal operation is indicated if an audio signal at an approximate level of 0.2V p-p is observed at this point. If this signal is present and yet the audio demodulator fails to provide an output, the problem is most likely with integrated circuit U3B, or transistor Q2, Q3, or associated components. If a signal is not observed on this line, return to the detector tests on pin 1 of integrated circuit U1. This signal is available at the top end of R12, a 4.7-ohm resistor, near the top of the printed-wiring board and near the three inductor shields on the right side of the board as viewed from the front of the receiver. This signal at this point should be a representation of the audio signal, with an amplitude of approximately 0.2V peak-to-peak, and will have a dc component of several volts superimposed on it. If the signal exists at this point, yet does not exist in the circuit trace running to the level potentiometer, then the problem is indicated in operational amplifier U2. If the signal does not exist at the detector test point on the output of U1, pin 1, then the problem is most likely in integrated circuit U1 or transistor Q1, or associated components. From here, troubleshooting using the voltages indicated on the schematic diagram is the recommended procedure. This will require that the printed-wiring board be placed on an extender, available from Scientic-Atlanta.

5.6.10 4.5-MHz SUBCARRIER MODULATOR

Most likely failure symptoms in the subcarrier modulator are either a complete loss of 4.5-MHz output or the drifting of the subcarrier frequency to something other than 4.5-MHz. Should the output be lost completely, first verify that the output potentiometer R50 is turned up. If this is turned up, place the module on an extender board and, using a high frequency oscilloscope with a low capacitance X10 probe, check for the presence of a signal on the source of transistor Q3 in the oscillator circuit. If the signal is not present at this point, check the sources of transistors Q2 and Q3, checking the voltage against that shown in table 5-19. This should reveal a defective transistor, if any. If the voltages are present on the source of Q2 and Q3, the problem is most likely in the resonant components L1, C10, CR4, or possibly C8. Should the oscillation be present and on the output of Q3, and yet not be seen on the output of the module, check the collector of transistor Q4 with the high impedance oscilloscope probe. The signal at this point should be a sine wave at 4.5-MHz. The exact amplitude of the sine wave will be determined by the shunt capacitance of the probe used, however, a voltage of several volts peak-to-peak should be present on the collector of Q4. If this signal exists, check the output on pin 6 of integrated circuit U7. Again the signal present here should be a sine wave of approximately 4V peak-to-peak. When the defective stage is found, more information about the defect may be derived by measuring the voltages on different integrated circuit pins and comparing these with the voltages shown (table 5-20).

The other likely problem would involve the oscillator running at the incorrect frequency. Should this happen use the oscilloscope to check terminals 3 and 14 of the phase detector integrated circuit U4. The signal on both pins 3 and 14 should be a square wave of approximately 15 volts peak-to-peak magnitude at a frequency of approximately 8.8 kHz. If this signal is missing from pin 3, then integrated circuit U3 or its input on pin 10 would be suspect. If the

signal is missing from pin 14, the oscillator circuit U6 or the oscillator divider U5 would be suspected. Check the signal on pin 3 of U3. This should be a 15-volt peak-to-peak square wave at a frequency of 1.125-MHz.

Another possible mode of failure would be failure to modulate the carrier signal. If this happens, first verify that an input on pin P2-11 exists. If this input exists and yet no modulation is superimposed on the subcarrier, then operational amplifier U1 is probably at fault. If operation of the module appears normal except that the OVERDEVIATION indicator fails to illuminate when the deviation exceeds 25-kHz, then amplifier U2, transistor Q1, or LED DS1 indicator is suspected.

Refer to tables 5-19 and 5-20 for the nominal voltage levels that should be present at the various active components when troubleshooting the 4.5-MHz subcarrier modulator board.

The following RF voltage checks should also be made:

a. Check the source of transistor Q3 for 2.7V peak-to-peak.

b. Check integrated circuit U7, pin 1, for 0.03V peak-to-peak; check pin 6 for 4V peak-to-peak. The voltage at pin 6 will vary according to setting of OUTPUT level control R50.

5.6.11 -24V DC POWER SUPPLY

5.6.11.1 Troubleshooting Procedures. Troubleshooting of the -24V dc power supply can be accomplished by following a step-by-step procedure to locate the area of the problem. The power supply should be removed from the Series 6600 video receiver by removing the four screws on the rear panel, and unplugging the supply from the printed-wiring board in the receiver. A resistive load must be connected to the output of the supply either through the output plug or the test jacks. Each output (+15V and -15V dc) must have from 10 ohms (22.5 watts) to 40 ohms (5.63 watts) connected from it to ground, to simulate a receiver load. A dc source of proper polarity, voltage, and sufficient current must be connected to plug A1P1. With these criteria satisfied, troubleshooting can begin.

Remove the two switching cards from the power supply, with the power off, remembering which one came from the positive supply. Negative 15V dc should be present on the printed circuit run between the two connectors on the top side of the board when power is turned on. Also, check pin 4 on each of the four integrated circuits U1, U2, U3, and U4, for -15V dc. If no voltage is present, either the voltage regulator U5 has a fault or its output is shorted. Check for the presence of input voltage on pin 2 of U5.

Assuming power is present on the interconnect board, turn the power off and plug in the positive supply switching board. With power on, +15V dc should be present on the output; if not, check for -15V dc present on the integrated circuit U1, pin 12, referenced to ground (pin 10). If voltage is present, proceed further.

Remove the four wires connected to the two pins of each power transistor Q3 and Q4. This will disengage any power switching and enable further troubleshooting. Replace the board in the positive supply slot, with the four wires away from any contact. With an oscilloscope capable of discerning a 40-kHz square wave, observe the signal on the collector (case) of either transistor Q1 or Q2. The signal observed should be similar to figure 5-13. If no signal is present, verify that integrated circuit U1 is operating properly by observing a square wave signal at pin 3 (refer to figure 5-14).

If the signal is present at transistors Q1 and Q2, reconnect transistors Q3 and Q4. The heat sink of these transistors should have a signal similar to figure 5-15.

Unbalance of power transistor drives causes a waveform similar to figure 5-16. This results in excessive power dissipation and must be corrected. Carefully adjust potentiometer R11 to obtain a clear waveform similar to those in figure 5-15.

TABLE 5-19. 4.5-MHz SUBCARRIER MODULATOR
TRANSISTOR DC VOLTAGES

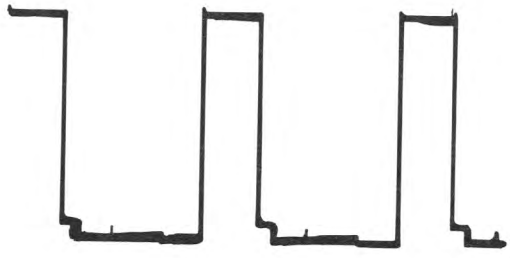
Transistor Reference Designation	Expected Measured dc Voltages (V dc) Emitter	Base	Collector
Q1	-	-	+13.66
Q2 (FET)	+2.42 SOURCE	GATE	DRAIN
Q3 (FET)	+3.6 SOURCE	GATE	DRAIN
Q4	+0.07	+0.69	+10.43

TABLE 5-20. 4.5-MHz SUBCARRIER MODULATOR
INTEGRATED CIRCUIT DC VOLTAGES

Integrated Circuit Reference Designation	Expected Measured dc Voltages (V dc) Pin Number 1	2	3	4	5	6	7	8	9	10
U1	0	0	0	-15	0	0	0	+15		
U2	±0.7	-	-	-15	-0.05	+1.3	-13.66	+15		
U3	+0.71	-	-	+0.75	+10.25*	+14.1*	-	+7.50*	+14.95	+7.60

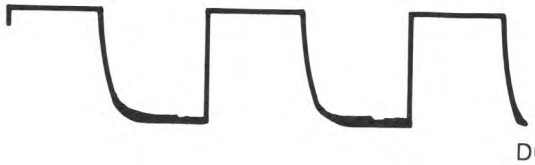
NOTE: 1. *These voltages as indicated will vary according to the setting of OUTPUT level control R50.

2. Voltage measurements are taken on a normally operating unit. The program audio board was removed.



D0579-15

Figure 5-13. Typical Signal at Q1 or Q2 Collector (-24V dc Power Supply)



D0579-16

Figure 5-14. Typical Signal at U1, Pin 3 (-24V dc Power Supply)

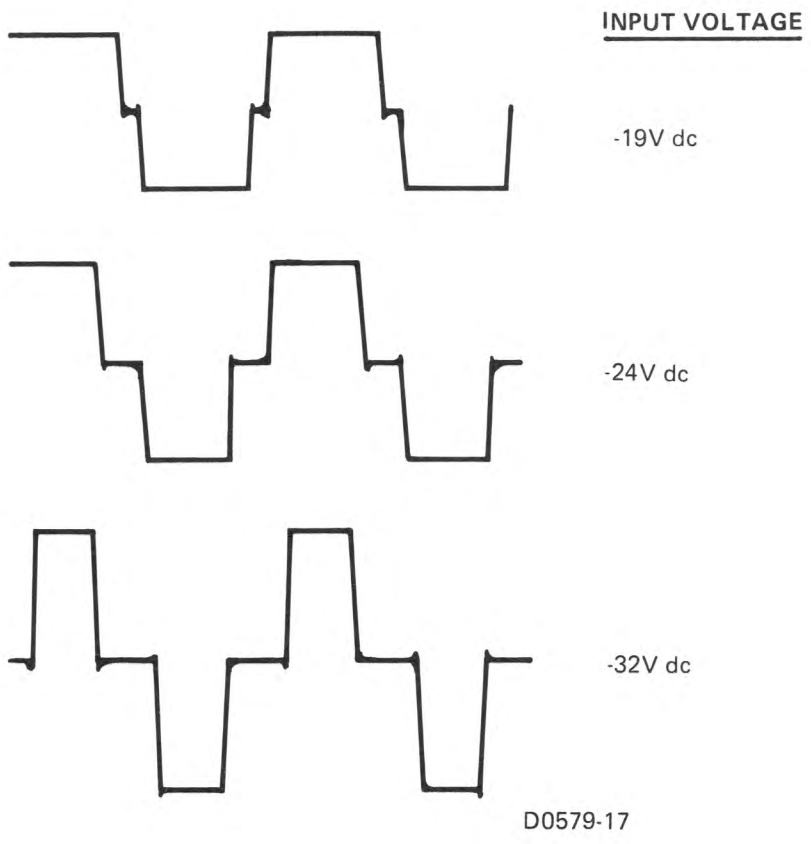


Figure 5-15. Typical Signal at Heat Sinks of Transistors Q1 through Q4 (-24V dc Power Supply)

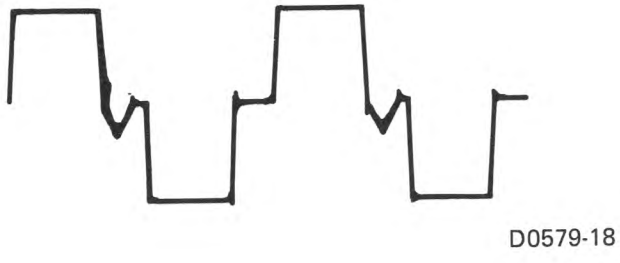


Figure 5-16. Typical Signal at Heat Sinks of Transistors Q1 through Q4 Indicating an Unbalanced Condition

Both switching boards are the same. Therefore, if the negative supply is malfunctioning, its switching board can be checked out exactly as described above. However, once it has been repaired, the waveform must be observed in the negative supply to verify proper operation.

5.6.11.2 Adjustment Procedure. The following is the adjustment procedure for adjusting the -24-volt dc power supply. Potentiometers R16, R22, R40, and R47 should be preset at 15 turns counterclockwise, and both R11's at one-quarter turn clockwise from the stop position.

a. Apply -24V dc input with 40 ohm loads on each output.

b. Adjust potentiometer R11 to obtain a clean waveform on each Q3 or Q4 collector.

c. Adjust potentiometers R10 and R34 for +15V and -15V output, respectively.

d. Apply a -19V dc input with 8 ohm loads on each output.

e. Set current limit by adjusting potentiometers R22 and R47 clockwise until the output voltage drops to ±13.5V dc.

f. Apply -19V dc input with 9 ohm loads on each output.

g. Set current foldback by adjusting potentiometers R16 and R40 clockwise until the output voltage drops to ±13.5 volts.

h. Apply -18V dc input with 10 ohm loads on each output and adjust potentiometer R4 counterclockwise on both supplies until the outputs drop to ±14.5V dc.

i. Adjustments are now complete.

5.6.11.3 Power Consumption. Both the positive and negative supplies operate with an efficiency of approximately 70 percent, depending on input voltages. It is recommended that they be operated with -24V dc input, even though the range is from -19V dc to -32V dc. The graph shown in figure 5-17 simplifies the calculation of receiver power consumption. Table 1-3 gives the current requirement for both polarities of the particular type receiver configuration. Using the graph, the supply input current can be obtained. The power consumption of the entire receiver is then equal to the sum of the supply input currents for both polarities multiplied by the input voltage level.

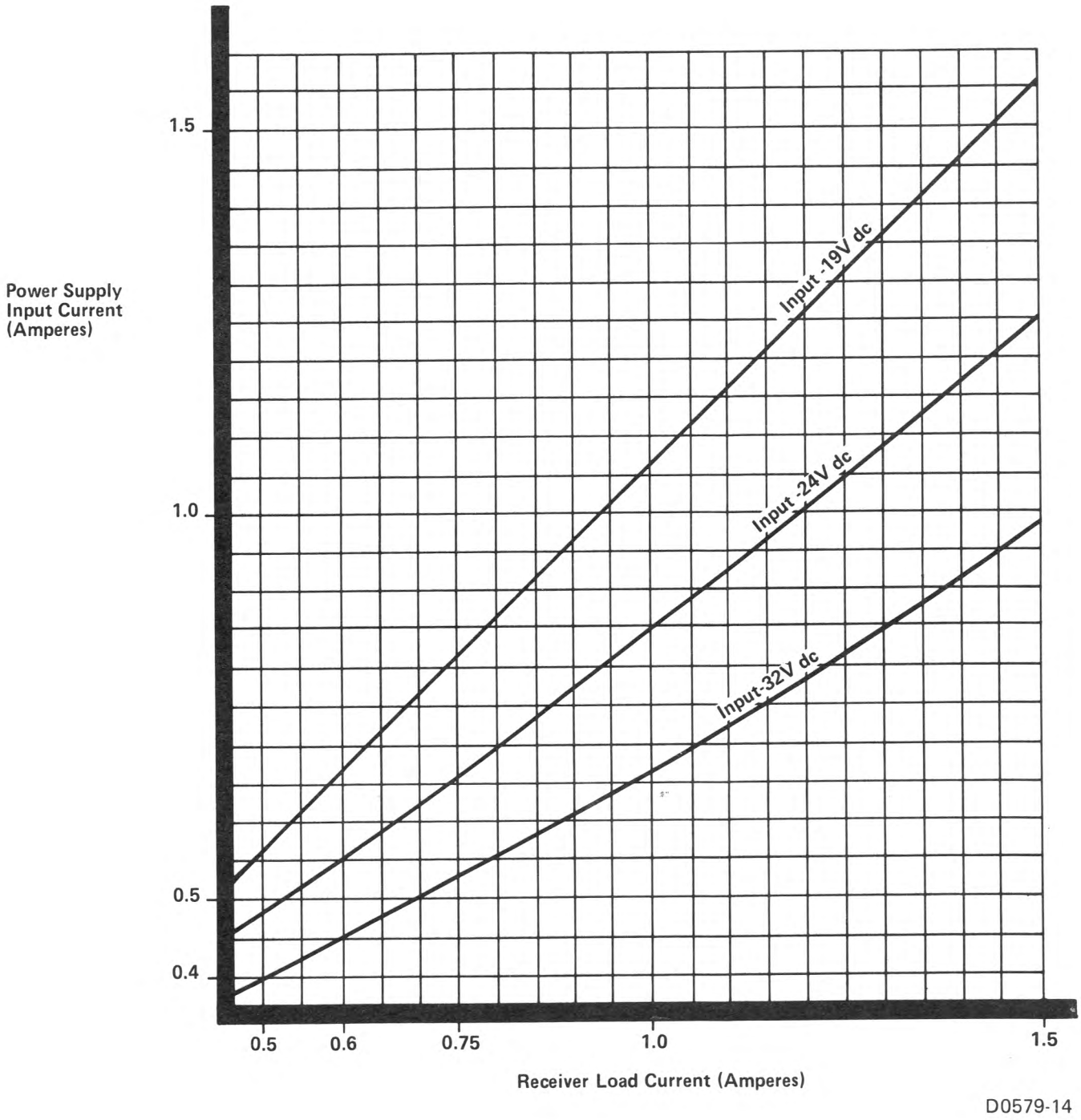


Figure 5-17. -24V dc Power Supply Current Consumption Graph

SECTION 6
PARTS LISTS

6.1 GENERAL

The parts lists in this section contain a description of all electrical components. A description of mechanical parts may be obtained from the assembly drawings in section 7. Refer to table 6-1 for a numerical listing of the parts lists, page numbers, and applicable drawing figure numbers.

6.2 EXPLANATION OF COLUMN HEADINGS

REF DESIG: This is the components designation that appears on the schematic diagram for that unit.

PART NO.: The Scientific-Atlanta part number is listed in this column.

DESCRIPTION: A brief electrical or mechanical description is given in this column.

VENDOR: A vendor code assigned by Scientific-Atlanta is given in this column. A cross-reference of these codes to manufacturers appears at the end of this section.

VENDOR PART NO.: The number assigned to the part by the manufacturer is listed in this column.

6.3 ORDERING PARTS

When ordering parts from Scientific-Atlanta, always include the S-A part number, part description, unit serial number, unit name, sub-assembly name, part manufacturer, and manufacturer's part number.

TABLE 6-1. SERIES 6600 PARTS LISTS INDEX

Parts List Number	Parts List Page Number	Applicable Drawing Figure Number
153189	6-49	7-31
228940	6-3	-
228980	6-8	-
228985	6-10	7-7
228990	6-13	7-8
228992	6-14	7-10
229000	6-5	7-1
229001	6-6	7-3
229015	6-17	-
229020	6-26	7-18
229025	6-27	7-20
229030	6-28	7-22
229035	6-36	7-24
229040	6-40	7-26
229045	6-46	7-30
229050	6-43	7-28
229055	6-50	7-33
229060	6-53	7-35
229070	6-55	7-37
229077	6-19	7-14
229840	6-61	7-40
229841	6-62	7-42
229843	6-63	7-43
230230	6-58	7-39
230260	6-16	7-11
230265	6-18	7-12
230270	6-21	7-16
230375	6-4	-

PARTS LIST
MODEL 6601 VIDEO RECEIVER ASSEMBLY
228940

PART# 0228940 EN/RV DESCRIPTION: 6601 RCVR ASSY-INTEGRATED CONV

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0228941		6601 VIDEO RECEIVER SCHEMATIC DIAGRAM			
	0228942		6601 VIDEO RECEIVER TEST PROCEDURE			
	0228943		6601 VIDEO RECEIVER BLOCK DIAGRAM			
005	0229000	D	ASSY MODULE AC POWER SUPPLY			1
006	0228980	B	ASSY 6601 DOWN CONVERTER			1
007	0229030	0	ASSY PWB IF AMPLIFIER			1
008	0229035	C	ASSY PWB VIDEO DEMODULATOR			1
009	0229040	A	ASSY PWB VIDEO CLAMP			1
010	0229050	D	ASSEMBLY PROGRAM AUDIO PWB			1
024	0228954		LABEL 6600 SERIES VIDEO RECEIVER			1
033	0081039		SCREW 8-32X3/8 FLT HD TAPTITE CAD PLT			4
040	0230365		ASSY CHASSIS ELECTRO-MECHANICAL ALTERNAT			1

PARTS LIST
SERIES 6600 CHASSIS ASSEMBLY
230375

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
011	0228960		SILKSCREEN FRONT PANEL VIDEO RECEIVER			1
012	0125717		LOCKING BAR EXTRUSION			1
013	0228953		IDENTIFICATION STRIP VIDEO RECEIVER 6600			1
014	0228956		HANDLE RIGHT BEZEL			1
015	0228957		HANDLE LEFT BEZEL			1
016	0228958		BEZEL TOP			1
017	0228955		BEZEL BOTTOM			1
018	0228947		PANEL BOTTOM			1
019	0228965	D	METER CARRIER TO NOISE RATIO SCD			1
020	0082384		LAMP LED YEL CRTDG W/YEL LENS 5V 20MA	DI	507-4757-3333-500	1
021	0077871		CLIP DATALAMP CARTRIDGE MTG	DI	515-0051	1
022	0228946		PANEL TOP			1
023	0228950		TOP RETENSION BAR ASSEMBLY			1
024	0228954		LABEL 6600 SERIES VIDEO RECEIVER			1
025	0082844		SCREW 4 X 5/16 PAN HD TYPE AB CD PLT STL	XZ	PER ANSI B18.6.4-1966	34
026	0083441		SCREW 4-40 X 5/8 PAN HD, CAD PLT STL	XZ	PER MS35206-218	4
027	0075870		SPACER NO.4 ID 3/16 OD 1/4 L NI PLT BRS	FS	9401	4
028	0083732		WASHER-NO. 4- .125 .312 .032 CAD PL STL	XZ	ANSI B18.22.1	7
029	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	7
030	0075445		NUT 4-40 PLAIN-HEX,STL,CAD PLT	XZ	PER MS35649-242	4
031	0075772		SCREW 6-32 X 1/2 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION	8
032	0082858		SCREW 4 X 3/4 PAN HD TYPE AB CAD PLT STL	XZ	PER ANSI B18.6.4-1966	4
033	0232037		SCREW 8-32 X 3/4 KNURLED HD BRASS NI PLT	XZ	BY DESCRIPTION	2
034	0077423		SCREW 4-40 X 3/16 TRUSS HD,CR PLT BRASS	XZ	CONTROL DWG 77423	8
035	0083398		SCREW 4-40 X 5/16 PAN HD, CAD PLT STL	XZ	PER MS35206-214	4
041	0228917		TAG,I.D.			1

PARTS LIST
AC POWER SUPPLY MODULE ASSEMBLY
229000

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229003		AC POWER SUPPLY SCHEMATIC DIAGRAM		
	0229004		AC POWER SUPPLY TEST PROCEDURE		
	0229005		AC POWER SUPPLY BLOCK DIAGRAM		
	0232064		SUB ASSY CAPACITOR BRIDGE		
	0232065WSA		WIRE LIST FOR REAR PANEL SUB ASSY		
001	0229008		PLATE REAR AC POWER SUPPLY SILK-SCREEN		
004	0151857		HEAT SINK AC POWER SUPPLY		
009	0073045		CABLE TIE - MINIATURE - 4 IN. LONG	PAN	SST1M
010	0070791		CLAMP PWR CORD STR-THRU .325-.360 CBL	HEY	SR-6P3-4
011	0087764		RING LOCKING TOGGLE SWITCH 15/32 IN.	CH	29-761
012	0084583		INSULATR CAP FOR TO-3 TRANSISTOR	THC	8903NB
013	0072378		SCREW 6-32 X 3/4 PAN HD,SST	XZ	PER MS51957-32
014	0073268		WASHER NO. 6 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
015	0077828		INSULATR THERMA-FILM FOR TO-3 TRANSISTOR	THC	43-03-4
016	0082640		HEAT SINK COMPOUND, SILICONE	DOW	340
017	0075939		WASHER-NO. 6- .156 .375 .049 AUS SST	XZ	ANSI B18.22.1
018	0073006		TERMINAL LUG SOLDER FLAT #6	GC	CM1021
019	0075446		NUT 6-32 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-264
020	0087774		BUSHING INSUL FLG NO. 6 ID 1/4 L NYLON	KEE	341
021	0073269		WASHER NO. 6 LOCK, EXT TOOTH, CAD PL STL	XZ	ANSI B18.21.1
023	0073265		WASHER NO. 4 LOCK, EXT TOOTH, CAD PL STL	XZ	ANSI B18.21.1
023	0073265		WASHER NO. 4 LOCK, EXT TOOTH, CAD PL STL	XZ	ANSI B18.21.1
026	0081128		SCREW 4-40 X 9/16 PAN HD,SST	XZ	BY DESCRIPTION
027	0071494		NUT 4-40 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-244
027	0071494		NUT 4-40 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-244
028	0083732		WASHER-NO. 4- .125 .312 .032 CAD PL STL	XZ	ANSI B18.22.1
029	0072327		SCREW 4-40 X 3/8 PAN HD,SST	XZ	PER MS51957-15
029	0072327		SCREW 4-40 X 3/8 PAN HD,SST	XZ	PER MS51957-15
031	0079427		SCREW 4-40 X 3/8 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION
032	0132439		LABEL HIGH VOLTAGE 1/2-IN. X 1-IN.	XZ	PER SA DWG 132439
033	0229013		PROTECTIVE COVER AC POWER SUPPLY		
034	0089734		SCREW 4-40 X 3/8 PAN HD TAPTITE SEMS	XZ	BY DESCRIPTION
041	0085492		RECTIFIER ASSY 200V 6A	VAO	VH248
A 002	0232066		SUB ASSY CHASSIS		
F 001	0071221		FUSE 1 1/2 AMP	L	3AG 31201.5
P 001	0071069		CORD SET 3-WIRE #18 125V 6-FT	RE	K5146
Q 001	0078017		TRANSSTR 2N3055 NPN SIL TO-3 CASE	FSC	2N3055
Q 002	0078017		TRANSSTR 2N3055 NPN SIL TO-3 CASE	FSC	2N3055
S 001	0072904		SWITCH TOG DPST AC 3A 250V	CH	7590K6
TP001	0082526		JACK TEST RED	J	105-1042-001
TP002	0082525		JACK TEST BLACK	J	105-1043-001
TP003	0087763		JACK TEST VIOLET	J	105-1052-001
XF001	0071249		FUS HLDR PNL MT FOR 3AG OR 3AB	BUS	HKP

PARTS LIST
AC POWER SUPPLY PWB ASSEMBLY
229001

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229001WPC		WIRE LIST FOR PWB SUB ASSY		
001	0229002		PWB AC POWER SUPPLY		
002	0081453		FUS HLDR CLIP FOR 3AG OR 3AB PC MT 2 PIN	ZIE	798
004	0079335		PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP
C 007	0035656		CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS
C 008	0035656		CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS
C 009	0080139		CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 010	0080139		CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 011	0080139		CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 012	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 013	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 014	0081099		CAPACITR .0047 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-472K
C 015	0081099		CAPACITR .0047 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-472K
C 016	0070671		CAPACITR 100 MF 25V	SP	500D107G025DD7
C 017	0070671		CAPACITR 100 MF 25V	SP	500D107G025DD7
C 018	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
CR001	0087761		DIODE 1N5355A SI ZEN 18V 5% 5W	MOS	1N5355A
CR002	0087761		DIODE 1N5355A SI ZEN 18V 5% 5W	MOS	1N5355A
CR003	0078274		DIODE 1N4002 SIL 100V 1A	MOS	1N4002
CR004	0078274		DIODE 1N4002 SIL 100V 1A	MOS	1N4002
CR005	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR007	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR008	0078274		DIODE 1N4002 SIL 100V 1A	MOS	1N4002
CR009	0078274		DIODE 1N4002 SIL 100V 1A	MOS	1N4002
Q 003	0087762		THYRISTOR TRIAC 2 MODE 200V 8A RMS	MOS	2N6342
Q 004	0087762		THYRISTOR TRIAC 2 MODE 200V 8A RMS	MOS	2N6342
Q 005	0077147		TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 006	0076316		TRANSSTR 2N4036 PNP SIL	RCA	2N4036S
Q 007	0077148		TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 008	0077148		TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3
R 002	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3
R 003	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3
R 004	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3
R 005	0071926		RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 006	0071926		RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 007	0071973		RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 008	0072019		RESISTOR 8.2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 009	0071918		RESISTOR 330 OHM 1/4W 10% COMP	AB	RCR07G331KS
R 010	0071901		RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 011	0071853		RESISTOR 27 OHM 1/4W 10% COMP	AB	RCR07G270KS
R 012	0083878		RESISTOR 562 OHM RN55C 1% MTL FLM	DP	RN55C5620F
R 013	0083912		RESISTOR 7.15K OHM RN55C 1% MTL FLM	DP	RN55C7151F
R 014	0071951		RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 015	0071816		RESISTOR 1 OHM 5W WW 5%	TO	VAL5
R 016	0072064		RESISTOR 33K OHM 1/4W 10% COMP	AB	RCR07G333KS
R 017	0083912		RESISTOR 7.15K OHM RN55C 1% MTL FLM	DP	RN55C7151F
R 018	0083878		RESISTOR 562 OHM RN55C 1% MTL FLM	DP	RN55C5620F
R 019	0071951		RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 020	0071816		RESISTOR 1 OHM 5W WW 5%	TO	VAL5
R 021	0084058		RESISTOR 3.57K OHM RN55C 1% MTL FLM	DP	RN55C3571F
R 022	0076595		POT 1K OHM 1W WW RECT 3/4 LONG 20T	BLI	3005P-1-102
R 023	0080380		RESISTOR 2.74K OHM RN55C 1% MTL FLM	DP	RN55C2741F
R 024	0084058		RESISTOR 3.57K OHM RN55C 1% MTL FLM	DP	RN55C3571F
R 025	0076595		POT 1K OHM 1W WW RECT 3/4 LONG 20T	BLI	3005P-1-102
R 026	0083908		RESISTOR 4.64K OHM RN55C 1% MTL FLM	DP	RN55C4641F
U 002	0081722		IC VLTG RGLTR +OR- 2 TO 37V 14 PIN DIP	FSC	723 DC

PARTS LIST
AC POWER SUPPLY SUBASSEMBLIES

CAPACITOR BRIDGE SUBASSEMBLY
232064

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0232064WSA		CAP BRIDGE WIRE LIST FOR AS POWER SUPPLY		
C 001	0081254		CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	RAD	TYPE AU .01 MF 20%
C 002	0081254		CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	RAD	TYPE AU .01 MF 20%
TB001	0075889		TERMINAL STRIP 5 LUG CENTER GROUND	CM	54C

CHASSIS SUBASSEMBLY
232066

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
002	0229009		CHASSIS AC POWER SUPPLY		
008	0021029		BUTTON,NYLON,CHASSIS SLIDE,ACESSORY	SA	PER DWG 21029
017	0075939		WASHER-NO. 6- .156 .375 .049 AUS SST	XZ	ANSI B18.22.1
025	0072363		SCREW 6-32 X 3/8 PAN HD,SST	XZ	PER MS51957-28
034	0071499		NUT FLEXLOC 6-32 THIN HEX CAD PL STL	UNB	21FK-632
T 001	0229006		XFMR SEC 40CT 3A PRI 115V 12%TAP 50/60HZ	XZ	PER CONT. DWG 229006

PARTS LIST
MODEL 6601 DOWNCONVERTER ASSEMBLY
228980

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0228993	D	SECOND CONVERTER SCHEMATIC DIAGRAM			
	0228994		SECOND CONVERTER TEST PROCEDURE			
	0229374		SECOND CONVERTER BLOCK DIAGRAM			
001	0228992		ASSY PWR SECOND CONVERTER			1
002	0087795		CONN COAX 3MM PC TO 6 GHZ FEM D HOLE MT	J	142-0294-031	1
003	0229323		MODULE DIVIDER TOP			1
004	0229321		MODULE DIVIDER BOTTOM			1
005	0229292		SILKSCREEN FRONT PANEL 2ND CONV			1
006	0229294		SILKSCREEN BACK PANEL 2ND CONV			1
007	0229325		TOP PANEL SECOND CONVERTER			1
008	0229285		SIDE PANEL MODULE			2
009	0082756		SCREW 4 X 1/4 PAN HD,TYPE AB,CAD PLT STL	XZ	PER ANSI B18.6.4-1966	50
010	0077863		CAPACITR .001 MF 500V FDTHRU THD GMV	SPU	54-804-002-102P	1
011	0082844		SCREW 4 X 5/16 PAN HD TYPE AB CD PLT STL	XZ	PER ANSI B18.6.4-1966	20
012	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	10
013	0073012		TERMINAL GND INT TOOTH NO4 ANGLED	SH	1416-4	1
014	0229326		BOTTOM PANEL SECOND CONVERTER			1
015	0088081		SCREW 4 X 5/8 PAN HD,TYPE A OR B CAD PLT	XZ	PER ANSI B18.6.4-1966	11
A 001	0228996		MIXER DOUBLE BALANCED PC MT 880MHZ RF			1

PARTS LIST
MODEL 6601 DISCRETE DOWNCONVERTER
230060

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229511	6601 DISCRETE DOWN CONV SCHEMATIC DIAGRA		
	0229512	6601 DISCRETE DOWN CONV TEST PROCEDURE		
	0229513	6601 DISCRETE DOWN CONV BLOCK DIAGRAM		
007	0151838	FILTER BANDPASS 880 MHZ		
008	0228990	ASSY SECOND CONVERTER		
009	0228985	ASSY FIRST L.O. MODULE		
012	0088005	SCREW 4-40 X 3/16 TRUSS HD, CAD PLT STL	XZ	PER ANSI B18.6.3
013	0073394	WIRE 22 STRANDED WHITE	THM	PER MIL-W-16878D
014	0073394	WIRE 22 STRANDED WHITE	THM	PER MIL-W-16878D
015	0073394	WIRE 22 STRANDED WHITE	THM	PER MIL-W-16878D
019	0230070	INTERCONNECT FILTER TO SND CONV NO PAD		
020	0229518	INTERCONNECT MULT/FILTER TO FIRST LO		
023	0073045	CABLE TIE - MINIATURE - 4 IN, LONG	PAN	SST1M
024	0230370	ASSY CHASSIS SINGLE CH DWN CONV SA DISC		
025	0230061	LABEL 6601 DOWN CONVERTER		

PARTS LIST
MODEL 6601 FIRST L.O. MODULE ASSEMBLY
228985

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0228987PPC	PREFORM FOR FIRST LO		
	0228987WPC	WIREPREP FOR FIRST LO		
	0228988	FIRST LO SCHEMATIC DIAGRAM		
	0228989	FIRST LO TEST PROCEDURE		
	0229369	FIRST LO BLOCK DIAGRAM		
001	0228986	PWB,FIRST LO		
002	0085970	SOCKET 14 PIN DIP PC MT LOW PROFILE	AMP	530177-1
002	0229285	SIDE PANEL MODULE		
003	0229287	FRONT PANEL FIRST LO		
004	0229290	SILKSCREEN BACK PANEL 1ST LO		
005	0229295	REMOVABLE PANEL MODULE		
006	0083549	SCREW 4-40 X 7/16 PAN HD, CAD PLT STL	XZ	PER MS35206-216
007	0077578	CLIP CRYSTAL HOLD DOWN FOR HC6/U CASE	MJ	33082
008	0083732	WASHER-NO. 4- ,125 ,312 ,032 CAD PL STL	XZ	ANSI B18.22.1
009	0076779	WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
010	0075445	NUT 4-40 PLAIN-HEX,STL,CAD PLT	XZ	PER MS35649-242
011	0082756	SCREW 4 X 1/4 PAN HD,TYPE AB,CAD PLT STL	XZ	PER ANSI B18.6.4-196
012	0082844	SCREW 4 X 5/16 PAN HD TYPE AB CD PLT STL	XZ	PER ANSI B18.6.4-196
013	0073012	TERMINAL GND INT TOOTH NO4 ANGLED	SH	1416-4
014	0072297	SCREW 2-56 X 1/4 PAN HD,SST	XZ	PER MS51957-3
015	0077181	WASHER NO. 2 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
016	0071493	NUT 2-56 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-224
017	0088034	HEAT SINK 14 OR 16 DIP LONGITUDINAL FINS	AHM	141
018	0088035	HEAT SINK 14 OR 16 DIP LATERAL FINS	AHM	142
020	0078953	ADHESIVE SUPER BONDER 495 3 GRAM TUBE	LOC	495-04
C 001	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	CD	CD15FD121J03
C 002	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	CD	CD15FD121J03
C 003	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 004	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 005	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	CD	CD15ED330J03
C 006	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 007	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 008	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 009	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 010	0082273	CAPACITR .47 MF 100V MET POLYESTER 10%	SP	277P47491A2
C 011	0082273	CAPACITR .47 MF 100V MET POLYESTER 10%	SP	277P47491A2
C 012	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 013	0086671	CAPACITR .001 MF 200V CER MONO NPO 5%	KEM	C320C102J2G5CA
C 014	0086671	CAPACITR .001 MF 200V CER MONO NPO 5%	KEM	C320C102J2G5CA
C 015	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0082004	CAPACITR 3.3 PF 100V CER DISC COJ +-.25P	ER	835-024-COJO-339C
C 017	0081098	CAPACITR .47 MF 50V CER MONO 20%	ER	8131-050-651-474M
C 018	0087798	CAPACITR CHIP 100 PF 200V SOLDER TERM	KEM	C1210C101J2XAH
C 019	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 020	0077863	CAPACITR .001 MF 500V FDTHRU THD GMV	SPU	54-804-002-102P
C 021	0077863	CAPACITR .001 MF 500V FDTHRU THD GMV	SPU	54-804-002-102P
C 022	0070498	CAPACITR 47 PF 500V SILVER MICA 5%	CD	CD15ED470J03
CR001	0076705	DIODE 1N4733A SI ZEN 5.1V 5% 1W	MOS	1N4733A
CR002	0087799	DIODE KV3101 VARACTOR SIL RIBBON LEADS	KSW	KV3101

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
CR003	0087799	DIODE KV3101 VARACTOR SIL RIBBON LEADS	KBW	KV3101
CR004	0088020	DIODE MR500 SIL 50V 3A	MOS	MR500
CR005	0088020	DIODE MR500 SIL 50V 3A	MOS	MR500
E 001	0081766	CORE BEAD FERRITE 14 ,138X,037X,150L RED	STK	57-1829
E 002	0081766	CORE BEAD FERRITE 14 ,138X,037X,150L RED	STK	57-1829
E 003	0081766	CORE BEAD FERRITE 14 ,138X,037X,150L RED	STK	57-1829
E 004	0081766	CORE BEAD FERRITE 14 ,138X,037X,150L RED	STK	57-1829
E 005	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 006	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 007	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 008	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 009	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 010	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 011	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
E 012	0081718	CORE BEAD FERRITE 7D ,138X,037X,150L GRN	STK	57-1413
J 001	0087795	CONN COAX 3MM DC TO 6 GHZ FEM D HOLE MT	J	142-0294-031
L 002	0230297	TOROID CHOKE		
L 004	0077944	INDUCTOR ,27 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0085795	TRANSSTR MM3904 NPN SIL TO-52 PKG	MOS	MM3904
Q 002	0081945	TRANSSTR SRF-397 SIL NPN	MOS	SRF-397
R 001	0072034	RESISTOR 12K OHM 1/4W 10% COMP	AB	RCR07G123KS
R 002	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 003	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 004	0071966	RESISTOR 1,5K OHM 1/4W 10% COMP	AB	RCR07G152KS
R 005	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 007	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 008	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 009	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 010	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 011	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 012	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 013	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 014	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 015	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 016	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 017	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 018	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 019	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 020	0071853	RESISTOR 27 OHM 1/4W 10% COMP	AB	RCR07G270KS
R 021	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 023	0079713	RESISTOR 2,00K OHM RN55C 1% MTL FLM	DP	RN55C2001F
R 024	0083911	RESISTOR 5,62K OHM RN55C 1% MTL FLM	DP	RN55C5621F
R 026	0071873	RESISTOR 56 OHM 1/4W 10% COMP	AB	RCR07G560KS
R 027	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 028	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 029	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071889	RESISTOR 100 OHM 1/2W 10% COMP	AB	RCR20G101KS
R 031	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 032	C071857	RESISTOR 33 OHM 1/4W 10% COMP	AB	RCR07G330KS
R 033	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 034	0072165	RESISTOR 470K OHM 1/4W 10% COMP	AB	RCR07G474KS
R 035	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
U 001	0087785	IC PHASE/FREQ DET ECL FOR PLL 14L-DIP	MOS	MC12040L
U 002	0078977	IC OP AMP 8L-TO5 70C COMP 741C	MOS	MC1741CG
U 003	0087786	IC ECL PRESCALER DIVIDE BY-64 900-MHZ	PSS	SP4020
U 004	0084724	IC VLTG RGLTR +5 TO +30V .35A TYP 4-DIP	FSC	78MGT2C
U 004	0088333	IC VLTG RGLTR +1.2 TO +37 .8A TYP TO 220	NSC	LM317T
XY001	0078340	SOCKET CRYSTAL STEATITE FOR HC6V XTAL	MJ	33302

NOTE

The parts located on the First L.O. PWB Assembly 228987 are also located on this and the two preceding pages (under the First L.O. Module Assembly 228985)

PARTS LIST
SERIES 6600 SECOND CONVERTER ASSEMBLY
228990

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0228993		SECOND CONVERTER SCHEMATIC DIAGRAM		
	0228994		SECOND CONVERTER TEST PROCEDURE		
	0229374		SECOND CONVERTER BLOCK DIAGRAM		
001	0228992		ASSY PWB SECOND CONVERTER		
002	0087795		CONN COAX 3MM DC TO 6 GHZ FEM D HOLE MT	J	142-0294-031
003	0229323		MODULE DIVIDER TOP		
004	0229321		MODULE DIVIDER BOTTOM		
005	0229292		SILKSCREEN FRONT PANEL 2ND CONV		
006	0229294		SILKSCREEN BACK PANEL 2ND CONV		
007	0229325		TOP PANEL SECOND CONVERTER		
008	0229285		SIDE PANEL MODULE		
009	0082756		SCREW 4 X 1/4 PAN HD,TYPE AB,CAD PLT STL	XZ	PER ANSI B18,6,4-1966
010	0077863		CAPACITR ,001 MF 500V FDTHRU THD GMV	SPU	54-804-002-102P
011	0082844		SCREW 4 X 5/16 PAN HD TYPE AB CD PLT STL	XZ	PER ANSI B18,6,4-1966
012	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18,21,1
013	0073012		TERMINAL GND INT TOOTH NO4 ANGLED	SH	1416-4
014	0229326		BOTTOM PANEL SECOND CONVERTER		
015	0088081		SCREW 4 X 5/8 PAN HD,TYPE A OR B CAD PLT	XZ	PER ANSI B18,6,4-1966
A 001	0228996		MIXER DOUBLE BALANCED PC MT 880MHZ RF		
L 001	0081718		CORE BEAD FERRITE 7D .138X,037X,150L GRN	STK	57-1413

PARTS LIST
SERIES 6600 SECOND CONVERTER PWB ASSEMBLY
228992

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0228992PPC		PREFORM FOR 2ND CONVERTER 6601		1165
001	0228991		PWB 2ND LO-MIXER-AMP		
002	0088004		SOCKET PIN .026-.033 DIA CLOSED BOTTOM	AMP	50864-6
003	0081976		SHIELD CAN BRASS .19 DIA HOLE CAD PLATED	STX	307A-40 & DESCRIPTION
005	0086759		SPACER LEAD, GLASS BEAD GREEN	WCO	2120L GREEN
C 001	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 002	0077495		CAPACITR .68 PF 500V CER TUBULAR	A	CC20CKR68C
C 003	0083007		CAPACITR 1.3-5.4 PF AIR PC MT	J	187-0103-005
C 004	0083007		CAPACITR 1.3-5.4 PF AIR PC MT	J	187-0103-005
C 005	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 006	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 007	0083007		CAPACITR 1.3-5.4 PF AIR PC MT	J	187-0103-005
C 008	0077495		CAPACITR .68 PF 500V CER TUBULAR	A	CC20CKR68C
C 010	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 011	0081923		CAPACITR 6.0 PF 500V CER DISC COH +-.25P	ER	831-COHO-609C
C 012	0081923		CAPACITR 6.0 PF 500V CER DISC COH +-.25P	ER	831-COHO-609C
C 014	0070518		CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 016	0073493		CAPACITR 18 PF 500V SILVER MICA 5%	CD	CD15CD180J03
C 017	0082431		CAPACITR 22 PF 100V CER DISC COG 5%	ERT	835-024-COGO-220J
C 018	0081210		CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 019	0070544		CAPACITR .001 MF 1KV CER DISC Z5F 10%	CRL	DD102
C 020	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 021	0070490		CAPACITR 30 PF 500V SILVER MICA 5%	CD	CD15ED300J03
C 022	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000
C 023	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 024	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 025	0081125		CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	ER	530-000
C 026	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 027	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000
C 028	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 029	0081210		CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 030	0080147		CAPACITR 1 MF 35V SOLID TANT POL 20%	SP	196D105X0035HA1
C 031	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
C 032	0070490		CAPACITR 30 PF 500V SILVER MICA 5%	CD	CD15ED300J03
C 033	0070509		CAPACITR 68 PF 500V SILVER MICA 5%	CD	CD15ED680J03
C 034	0037113		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
L 004	0079166		INDUCTOR .15 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 007	0077954		INDUCTOR .47 UH SUBMIN UNSHLD 10%	DP	IR-2
L 008	0079165		INDUCTOR .1 UH SUBMIN UNSHLD 10%	DP	IR-2
L 009	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2
L 010	0079166		INDUCTOR .15 UH SUBMIN UNSHLD 10%	DP	IR-2
L 012	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2
L 013	0082591		INDUCTOR .39 UH SUBMIN UNSHLD 10%	DP	IR-2
L 014	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
Q 001	0083720		TRANSSTR MRF 901 NPN SIL	MOS	MRF 901
Q 002	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 003	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179

PARTS LIST
SERIES 6600 SECOND CONVERTER PWB ASSEMBLY
228992 - continued

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
Q 004	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 005	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179
R 001	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM		
R 002	0089048		RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 003	0089070		RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 004	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM		
R 005	0089041		RESISTOR 51 OHM 1/4W 5% CARBON FILM		
R 006	0089046		RESISTOR 82 OHM 1/4W 5% CARBON FILM		
R 007	0089054		RESISTOR 180 OHM 1/4W 5% CARBON FILM		
R 008	0089068		RESISTOR 680 OHM 1/4W 5% CARBON FILM		
R 009	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM		
R 010	0089048		RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 011	0089070		RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 012	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM		
R 013	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM		
R 014	0089068		RESISTOR 680 OHM 1/4W 5% CARBON FILM		
R 015	0089046		RESISTOR 82 OHM 1/4W 5% CARBON FILM		
R 016	0089080		RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 017	0089080		RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 018	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM		
R 019	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM		
R 020	0089022		RESISTOR 8.2 OHM 1/4W 5% NICKEL FILM		
R 021	0089022		RESISTOR 8.2 OHM 1/4W 5% NICKEL FILM		
R 022	0089052		RESISTOR 150 OHM 1/4W 5% CARBON FILM		
R 024	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM		
T 001	0228998		TRANSFORMER		
W 001	0228999		WIRE ASSY, SECOND CONVERTER DECOUPLER		
W 002	0228997		COAX CABLE SECOND CONVERTER		
Y 001	0229364		CRYSTAL 101.25 MHZ 10PPM SERIES RES		

PARTS LIST
MODEL 6602 FREQUENCY AGILE DOWNCONVERTER ASSEMBLY
230260

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0230261		FREQ AGILE DOWN CONVERTER SCHEMATIC DIAG			
	0230262		FREQ AGILE DOWN CONVERTER TEST PROCEDURE			
	0230263		FREQ AGILE DOWN CONVERTER BLOCK DIAGRAM			
008	0228990	A	ASSY SECOND CONVERTER			1
009	0230065		CAST AGILE LO MODULE ASSY			1
010	0230270	D	ASSY INTERFACE LOGIC BOARD			1
019	0088005		SCREW 4-40 X 3/16 TRUSS HD, CAD PLT STL	XZ	PER ANSI B18.6.3	15
021	0082210		SPACER 4-40 ID 3/16 OD 1/4 L HEX CD BRS	KEE	1450	4
024	0229329		FLEX JUMPER SND CONV TO INT CONV			1
025	0230287		INTERCONNECT AGILE LO TO INT CONV			1
028	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	4
029	0230366		ASSY CHASSIS FREQUENCY AGILE DOWN CONV			1
030	0230062		LABEL 6602 DOWN CONVERTER			1
031	0230410		SUBASSEMBLY AGILE DOWN CONVERTER			1

PARTS LIST
MODEL 6602 FREQUENCY AGILE DISCRETE DOWNCONVERTER
229015

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0230261		FREQ AGILE DOWN CONVERTER SCHEMATIC DIAG			
	0230262		FREQ AGILE DOWN CONVERTER TEST PROCEDURE			
	0230263		FREQ AGILE DOWN CONVERTER BLOCK DIAGRAM			
008	0228990	A	ASSY SECOND CONVERTER			1
009	0230065		CAST AGILE LO MODULE ASSY			1
010	0230270	D	ASSY INTERFACE LOGIC BOARD			1
018	0088005		SCREW 4-40 X 3/16 TRUSS HD, CAD PLT STL	XZ	PER ANSI B18.6.3	15
021	0082210		SPACER 4-40 TD 3/16 OD 1/4 L HEX CD BRS	KEE	1450	4
024	0230070		INTERCONNECT FILTER TO SND CONV NO PAD			1
025	0229519		INTERCONNECT AGILE LO TO MULT/FILTER			1
029	0151889		FILTER BANDPASS 880 MHZ			1
031	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	4
032	0230367		ASSY CHASSIS FREQ AGILE DWN CONV SA DISC			1
033	0230062		LABEL 6602 DOWN CONVERTER			1
034	0230415		SUBASSEMBLY AGILE DOWN CONV S/A DISCRETE			1

PARTS LIST
MODEL 6602 AGILE L.O. MODULE ASSEMBLY
230265

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0230268	C	AGILE LO SCHEMATIC			
	0230269		AGILE LO TEST PROCEDURE			
	0230279		AGILE LO BLOCK DIAGRAM			
001	0229077	D	ASSEMBLY AGILE LO PW BOARD			1
003	0230285		AGILE LO HOUSING			1
004	0088138		CONN COAX 3MM DC TO 6 GHZ ROUND HOLE MT	J	142-0293-031	1
005	0088146		FILTER EMI FEEDTHRU 100V 15A 8-32 MOUNT	AMP	859618-1	12
006	0085266		SCREW 4-40 X 7/32 PAN HD TAPTITE CAD PLT	CS	BY DESCRIPTION	43
007	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	15
008	0230286		TOP PANEL SILKSCREEN			1
009	0230288		COVER,AGILE LO			1
010	0073014		TERMINAL GND INT TOOTH NO8 ANGLED	SH	1416-8	1
012	0230296		AGILE LO INTERFACE CABLE			1

PARTS LIST
MODEL 6602 AGILE L.O. PWB ASSEMBLY
229077

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0086759		SPACER LEAD, GLASS BEAD GREEN	WCO	2120L GREEN	1
001	0229076	J	PWB AGILE LO			1
002	0085970		SOCKET 14 PIN DIP PC MT LOW PROFILE	AMP	530177-1	3
005	0085971		SOCKET 16 PIN DIP PC MT LOW PROFILE	AMP	530177-2	3
013	0078953		ADHESIVE SUPER BONDER 495 3 GRAM TUBE	LOC	495-04	
018	0229077WPC		WIRE PREP AGILE LO PCB			1
C 001	0082622		CAPACITR 4.5-20 PF MIN CER DISC PC MT	STZ	7S-TRIKO-02 4.5/20	1
C 002	0088117		CAPACITR 27 PF 1KV CER DISC S2L 10%	CRL	DD270	1
C 003	0077583		CAPACITR 390 PF 1KV CER DISC Z5F 10%	CRL	DD391	1
C 004	0081252		CAPACITR 120 PF 1 KV CER DISC S3N 10%	CRL	DD121	1
C 005	0170794		CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	UK50-103	1
C 006	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 007	0070495		CAPACITR 33 PF 1 KV CER DISC S2L 10%	CRL	DD330	1
C 008	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 009	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 010	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 011	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K	1
C 012	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K	1
C 013	0081157		CAPACITR .22 MF 50V CER MONO X7R 20%	ER	8131-050-X7R-224M	1
C 014	0081157		CAPACITR .22 MF 50V CER MONO X7R 20%	ER	8131-050-X7R-224M	1
C 015	0081099		CAPACITR .0047 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-472K	1
C 016	0084220		CAPACITR .015 MF 100V CER MONO X7R 10%	ER	8131-100-X7R-153K	1
C 017	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K	1
C 018	0081995		CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K	1
C 019	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M	1
C 020	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M	1
C 021	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 022	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
C 033	0088754		CAPACITR 3.3 PF 100V CER MONO NPO +-.25P	ER	8101-100-COJO-339C	1
C 035	0084221		CAPACITR .022 MF 100V CER MONO X7R 10%	ER	8131-100-X7R-223K	1
C 036	0087798		CAPACITR CHIP 100 PF 200V SOLDER TERM	KEM	C1210C101J2XAH	1
C 037	0084224		CAPACITR .15 MF 100V CER MONO 20%	ER	8131-100-651-154M	1
C 039	0080148		CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS	1
CR001	0078274		DIODE 1N4002 STL 100V 1A	MOS	1N4002	1
CR002	0078274		DIODE 1N4002 STL 100V 1A	MOS	1N4002	1
CR003	0087799		DIODE KV3101 VARACTOR SIL RIBBON LEADS	KSW	KV3101	1
CR004	0087799		DIODE KV3101 VARACTOR SIL RIBBON LEADS	KSW	KV3101	1
L 001	0078842		INDUCTOR 12 MH MIN SHLD ENCAP 10%	NYT	WEE-12000	1
L 003	0086129		INDUCTOR 27 MH SHLD ENCAP 10%	NYT	WEE-27000	1
L 004	0230297		TOROID CHOKE			1
L 006	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2	1
L 007	0230297		TOROID CHOKE			1
Q 001	0085795		TRANSSTR MM3904 NPN SIL TO-52 PKG	MOS	MM3904	1
Q 002	0081945		TRANSSTR SRF-397 SIL NPN	MOS	SRF-397	1
R 001	0089098		RESISTOR 12K OHM 1/4W 5% CARBON FILM			1
R 002	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1

PARTS LIST
MODEL 6602 AGILE L.O. PWB ASSEMBLY
229077 - continued

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
R 003	0089058		RESISTOR 270 OHM 1/4W 5% CARBON FILM			1
R 004	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1
R 005	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM			1
R 006	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 007	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM			1
R 008	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 009	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 010	0089092		RESISTOR 6.8K OHM 1/4W 5% CARBON FILM			1
R 011	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1
R 012	0089092		RESISTOR 6.8K OHM 1/4W 5% CARBON FILM			1
R 013	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1
R 014	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 015	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 016	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 017	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1
R 018	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 019	0089042		RESISTOR 56 OHM 1/4W 5% CARBON FILM			1
R 020	0089058		RESISTOR 270 OHM 1/4W 5% CARBON FILM			1
R 021	0089054		RESISTOR 180 OHM 1/4W 5% CARBON FILM			1
R 022	0089036		RESISTOR 33 OHM 1/4W 5% CARBON FILM			1
R 023	0089054		RESISTOR 180 OHM 1/4W 5% CARBON FILM			1
R 024	0089068		RESISTOR 680 OHM 1/4W 5% CARBON FILM			1
R 025	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM			1
R 026	0071880		RESISTOR 82 OHM 1/2W 10% COMP	AB	RCR20G820KS	1
R 027	0089024		RESISTOR 10 OHM 1/4W 5% CARBON FILM			1
R 028	0089088		RESISTOR 4.7K OHM 1/4W 5% CARBON FILM	ROH	R-25 BY DESCRIPTON	1
U 001	0084283		IC TTL FLIP-FLOP TYPE-D DUAL	TI	SN74LS74AN	1
U 002	0088118		IC TTL COUNTER BIN 50-MHZ DIVIDE 2X8	MOS	SN74LS293N	1
U 003	0086636		IC PHASE/FREQ DET TTL FOR PLL 16L-DIP	MOS	MC4044L	1
U 004	0086269		IC OP AMP PMOS 8L-TO5 70C COMP			1
U 005	0088119		IC TTL COUNTER DECADE 30-MHZ U/D	MOS	SN74LS168N	1
U 006	0088119		IC TTL COUNTER DECADE 30-MHZ U/D	MOS	SN74LS168N	1
U 007	0088119		IC TTL COUNTER DECADE 30-MHZ U/D	MOS	SN74LS168N	1
U 008	0087786		IC ECL PRESCALER DIVIDE BY-64 900-MHE	PSS	SP4020	1
Y 001	0088120		CRYSTAL 5.00 MHZ .002% 30 PF	XZ	PER SA DWG 88120	1

PARTS LIST
MODEL 6602 INTERFACE LOGIC BOARD ASSEMBLY
230270

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0230270PPC	PREFORM FOR INTERFACE LOGIC PCB		
	0230270SPC	SUB ASSY FOR INTERFACE LOGIC PCB		
	0230270WPC	WIRE PREP FOR INTERFACE LOGIC PCB		
	0230272	SCHEMATIC,INTERFACE LOGIC BOARD		
	0230273	TEST PROCEDURES,INTERFACE LOGIC BOARD		
	0230274	BLOCK DIAGRAM,INTERFACE LOGIC BOARD		
001	0230271	PWB,INTERFACE LOGIC		
002	0072297	SCREW 2-56 X 1/4 PAN HD,SST	XZ	PER MS51957-3
003	0077181	WASHER NO. 2 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
004	0071493	NUT 2-56 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-224
011	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
014	0079335	PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP
C 001	0081101	CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M
C 002	0081101	CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M
C 003	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 004	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 005	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 006	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 007	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
CR001	0076706	DIODE 1N4733A SI ZEN 5.1V 5% 1W	MOS	1N4733A
CR002	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR007	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR008	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR009	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR010	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR011	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR012	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR013	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR014	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR015	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR016	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR017	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR018	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR019	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR020	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR021	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR022	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR023	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR024	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR025	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR026	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR027	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR028	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR029	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR030	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
CR031	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR032	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR033	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR034	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR035	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR036	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR037	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR040	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR041	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR042	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR043	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR044	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR045	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR046	0082749	DIODE 1N4754A SI ZEN 39V 5% 1W	MOS	IN4754A
Q 001	0083032	TRANSSTR 2N2222A NPN SIL	XZ	2N2222A
Q 002	0083032	TRANSSTR 2N2222A NPN SIL	XZ	2N2222A
Q 003	0084466	TRANSSTR MPS-A12 NPN SIL	MOS	MPS-A12
Q 004	0085992	TRANSSTR 2N2905A PNP SIL	MOS	2N2905A
Q 005	0088161	TRANSSTR MJE251 PNP SIL POWER		
R 002	0079713	RESISTOR 2.00K OHM RN55C 1% MTL FLM	DP	RN55C2001F
R 003	0083911	RESISTOR 5.62K OHM RN55C 1% MTL FLM	DP	RN55C5621F
R 005	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 006	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 007	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 008	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 009	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 010	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 011	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 012	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 013	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 014	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 015	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 016	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 017	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 018	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 019	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 020	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 021	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 022	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 023	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 024	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 025	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 026	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 027	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 028	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS
R 029	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 030	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 031	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 032	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 033	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
S 001	0230221	FREQUENCY SELECT SWITCH		
U 001	0083014	IC CMOS BUFFER HEX INVERT	MOS	MC14049BCL
U 002	0084959	IC CMOS ADDER 4-BIT FULL	MOS	MC14008CL
U 003	0084959	IC CMOS ADDER 4-BIT FULL	MOS	MC14008CL
U 004	0088128	IC CMOS SELECTOR DATA QUAD 2-CHNL	MOS	MC14519BCL
U 005	0088128	IC CMOS SELECTOR DATA QUAD 2-CHNL	MOS	MC14519BCL
U 006	0085925	IC CMOS GATE EX-OR 2-IN QUAD	MOS	MC14070BCL
U 007	0085925	IC CMOS GATE EX-OR 2-IN QUAD	MOS	MC14070BCL
U 008	0085927	IC CMOS GATE NOR 8-IN	MOS	MC14078BCL
VR001	0084724	IC VLTG RGLTR +5 TO +30V .35A TYP 4-DIP	FSC	78MGI2C
VR001	0088333	IC VLTG RGLTR +1.2 TO +37 .8A TYP TO 220	NSC	LM317T

PARTS LIST
MODEL 6603 FREQUENCY AGILE INTEGRATED DOWNVERTER ASSEMBLY
231635

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0230261	FREQ AGILE DOWN CONVERTER SCHEMATIC DIAG		
	0230262	FREQ AGILE DOWN CONVERTER TEST PROCEDURE		
	0231633	FREQ AGILE DOWN CONV BLOCK DIA 6603		
008	0228990	ASSY SECOND CONVERTER		
009	0230065	CAST AGILE LO MODULE ASSY		
009	0230265	ASSY AGILE LO MODULE		
010	0231624	ASSY INTERFACE PW BOARD		
014	0230292	INTERFACE LOGIC POWER CABLE		
015	0230293	SECOND CONVERTER POWER CABLE		
016	0230294	INTEGRATED CONV POWER CABLE		
017	0231631	INTERFACE BOARD RELAY CABLE		
018	0230296	AGILE LO INTERFACE CABLE		
019	0088005	SCREW 4-40 X 3/16 TRUSS HD, CAD PLT STL	XZ	PER ANSI B18.6.3
021	0082210	SPACER 4-40 ID 3/16 OD 1/4 L HEX CD BRS	KEE	1450
024	0229329	FLEX JUMPER BND CONV TO INT CONV		
025	0230287	INTERCONNECT AGILE LO TO INT CONV		
028	0076779	WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
029	0231637	CHASSIS ASSY FREQ AGILE DOWN CONV (INT)		
030	0231632	LABEL 6603 DOWN CONVERTER		

PARTS LIST
MODEL 6603 FREQUENCY AGILE DISCRETE DOWNCONVERTER ASSEMBLY
231634

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0230261	FREQ AGILE DOWN CONVERTER SCHEMATIC DIAG		
	0230262	FREQ AGILE DOWN CONVERTER TEST PROCEDURE		
	0231633	FREQ AGILE DOWN CONV BLOCK DIA 6603		
008	0228990	ASSY SECOND CONVERTER		
009	0230065	CAST AGILE LO MODULE ASSY		
009	0230265	ASSY AGILE LO MODULE		
010	0231624	ASSY INTERFACE PW BOARD		
018	0088005	SCREW 4-40 X 3/16 TRUSS HD, CAD PLT STL	XZ	PER ANSI B18.6.3
021	0082210	SPACER 4-40 ID 3/16 OD 1/4 L HEX CD BRS	KEE	1450
024	0230070	INTERCONNECT FILTER TO SND CONV NO PAD		
025	0229519	INTERCONNECT AGILE LO TO MULT/FILTER		
029	0151889	FILTER BANDPASS 880 MHZ		
031	0076779	WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
032	0231636	CHASSIS ASSY FREQ AGILE DOWN CONV SA DIS		
033	0231632	LABEL 6603 DOWN CONVERTER		

PARTS LIST
MODEL 6603 INTERFACE PWB ASSEMBLY
231624

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0230273	TEST PROCEDURES,INTERFACE LOGIC BOARD		
	0231623	SCHEMATIC INTERFACE PW BOARD		
	0231624WPC	ASSY 6603 INTERFACE LOGIC WIRE PREP LIST		
	0231626	BLOCK DIAGRAM INTERFACE BOARD		
002	0072297	SCREW 2-56 X 1/4 PAN HD,SST	XZ	PER MS51957-3
003	0077181	WASHER NO. 2 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1
004	0071493	NUT 2-56 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-224
008	0088147	CONN HEADER DBL ROW RT ANGLE 54-PIN PC	AMP	2-87571-4
009	0088149	CONN HEADER SPACER	AMP	87743-1
014	0079335	PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP
C 001	0081101	CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M
C 002	0081101	CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M
C 003	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T3628106M020AS
C 004	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T3628106M020AS
C 005	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T3628106M020AS
Q 001	0084466	TRANSSTR MPS-A12 NPN SIL	MOS	MPS-A12
Q 002	0085992	TRANSSTR 2N2905A PNP SIL	MOS	2N2905A
Q 003	0088161	TRANSSTR MJE251 PNP SIL POWER		
R 001	0075564	RESISTOR 18 OHM 2W 10% COMP	AB	RCR42G180KS
R 004	0071838	RESISTOR 10 OHM 1W 10% COMP	AB	RCR32G100KS
R 014	0071903	RESISTOR 180 OHM 1W 10% COMP	AB	RCR32G181KS
R 015	0071961	RESISTOR 1.2K OHM 1/2W 10% COMP	AB	RCR20G122KS
S 001	0230221	FREQUENCY SELECT SWITCH		
VR001	0084724	IC VLTG RGLTR +5 TO +30V .35A TYP 4-DIP	FSC	78MGT2C
VR001	0088333	IC VLTG RGLTR +1.2 TO +37 .5A TYP TO 220	NSC	LM317T

PARTS LIST
SERIES 6600 INTERCONNECTING PWB ASSEMBLY
229020

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0229020WPC		WIRE PREP FOR ASSY PWB INTERCONNECTING			1
	0229022		INTERCONNECTING PWB SCHEMATIC DIAGRAM			
	0229023		INTERCONNECTING PWB TEST PROCEDURE			
	0229024		INTERCONNECTING PWB BLOCK DIAGRAM			
	0234028		LOCTITE TAK PAK 1 FL 02			
	0234029		TEFLON GLUE TIPS			
001	0229021		PWB INTERCONNECTING			1
009	0073045		CABLE TIE - MINIATURE - 4 IN. LONG	PAN	SST1M	3
CR001	0081257		DIODE 1N4748A ST ZEN 22V 5% 1W	MOS	1N4748A	1
J 006	0087769		CONN FLEXIBLE PC 21 COND SIDE ENTRY	BDW	HBLB21R1	1
J 007	0170690		CONNECTR 15 PIN SINGLE READOUT FXD PINS	DP	EBT-156-15-D1X	1
J 008	0170690		CONNECTR 15 PIN SINGLE READOUT FXD PINS	DP	EBT-156-15-D1X	1
J 009	0170690		CONNECTR 15 PIN SINGLE READOUT FXD PINS	DP	EBT-156-15-D1X	1
J 010	0170690		CONNECTR 15 PIN SINGLE READOUT FXD PINS	DP	EBT-156-15-D1X	1
J 011	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 012	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 013	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 014	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 015	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 016	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 017	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 018	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 019	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 020	0170689		CONNECTR 12 PIN SINGLE READOUT FXD PINS	DP	EBT-156-12-D1X	1
J 021	0137915		CONNECTOR SINGLE READOUT 6-PIN			1
P 001	0082770		CONN RECT PIN HEADER PC MD 4 CIRCUIT	AMP	350211-1	1
R 001	0087779		POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M	1
R 002	0087766		POT 500 OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH501M	1
R 003	0071897		RESISTOR 150 OHM 1/4W 10% COMP	AB	RCR07G151KS	1

PARTS LIST
SERIES 6600 CONNECTOR PWB ASSEMBLY
229025

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229027		CONNECTOR PWB SCHEMATIC DIAGRAM		
	0229028		CONNECTOR PWB TEST PROCEDURE		
	0229029		CONNECTOR PWB BLOCK DIAGRAM		
001	0229026		PWB CONNECTOR		
J 001	0082769		CONN RECT PIN HEADER PC BD 6 CIRCUIT	AMP	1-380999-0
J 002	0082769		CONN RECT PIN HEADER PC BD 6 CIRCUIT	AMP	1-380999-0
J 003	0087769		CONN FLEXIBLE PC 21 COND SIDE ENTRY	BDW	HBLB21R1
TB001	0087768		BARRIER STRIP 6 TERM SINGLE ROW PC MT	BEU	71506-C
TB002	0087768		BARRIER STRIP 6 TERM SINGLE ROW PC MT	BEU	71506-C
TB003	0087768		BARRIER STRIP 6 TERM SINGLE ROW PC MT	BEU	71506-C

PARTS LIST
SERIES 6600 IF AMPLIFIER PWB ASSEMBLY
229030

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229030PPC	PREFORM IF AMPLIFIER PCB		
	0229032	IF AMPLIFIER SCHEMATIC DIAGRAM		
	0229033	IF AMPLIFIER TEST PROCEDURE		
	0229034	IF AMPLIFIER BLOCK DIAGRAM		
001	0229031	PWB IF AMPLIFIER		
002	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
003	0081976	SHIELD CAN BRASS ,19 DIA HOLE CAD PLATED	STX	307A-40 & DESCRIPTIO
C 001	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 002	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 003	0081971	CAPACITR 2,2 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-229C
C 004	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 005	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 006	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 007	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 008	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 009	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 010	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 011	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 012	0081929	CAPACITR 13 PF 500V CER DISC COG 5%	ER	831-COGO-130J
C 013	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 014	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 015	0080139	CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 017	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
C 018	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 019	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 020	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 021	0081934	CAPACITR 18 PF 100V CER DISC COG 5%	ER	835-COGO-180J
C 022	0081933	CAPACITR 17 PF 500V CER DISC COG 5%	ER	831-COGO-170J
C 023	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 024	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 025	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 026	0081971	CAPACITR 2,2 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-229C
C 027	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 028	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 029	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 030	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 031	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 032	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 033	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 034	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 035	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 036	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 037	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 038	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 039	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 040	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 041	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 042	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 043	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 044	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 045	0082012	CAPACITR 6,8 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-689C
C 046	0088007	CAPACITR 2,5-7,5 PF MIN CER PC MT	STE	78-TRIKO-02 2,5/7,5
C 047	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 048	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 049	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 050	0081971	CAPACITR 2,2 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-229C
C 051	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 052	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 053	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 054	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 055	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 056	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 057	0082012	CAPACITR 6,8 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-689C
C 058	0088007	CAPACITR 2,5-7,5 PF MIN CER PC MT	STE	78-TRIKO-02 2,5/7,5
C 059	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 060	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 061	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 062	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 063	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 064	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 065	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 066	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 067	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 068	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 069	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 070	0082012	CAPACITR 6,8 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-689C
C 071	0088007	CAPACITR 2,5-7,5 PF MIN CER PC MT	STE	78-TRIKO-02 2,5/7,5
C 072	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 073	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 074	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 075	0081971	CAPACITR 2,2 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-229C
C 076	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 077	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 078	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 079	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 080	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 081	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 082	0082012	CAPACITR 6,8 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-689C
C 083	0088007	CAPACITR 2,5-7,5 PF MIN CER PC MT	STE	78-TRIKO-02 2,5/7,5
C 084	0081926	CAPACITR 10 PF 500V CER DISC COH +-,25P	ER	831-COHO-100C
C 085	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 086	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 087	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 088	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 089	0081746	CAPACITR 1,0 PF 500V CER DISC COK +-,25P	ER	831-COKO-109C
C 090	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 091	0037113	CAPACITR ,01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 092	0082006	CAPACITR 3,9 PF 100V CER DISC COJ +-,25P	ER	835-024-COJO-399C
C 093	0082015	CAPACITR 9,1 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-919C
C 094	0082012	CAPACITR 6,8 PF 100V CER DISC COH +-,25P	ER	835-024-COHO-689C

PART# 0229030 DESCRIPTION: ASSY PWB IF AMPLIFIER

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 095	0080007	CAPACITR 2.5-7.5 PF MIN CER PC MT	STZ	7S-TRIKO-02 2.5/7.5
C 096	0081926	CAPACITR 10 PF 500V CER DISC COH +-.25P	ER	831-COHO-100C
C 097	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 098	0082006	CAPACITR 3.9 PF 100V CER DISC COJ +-.25P	ER	835-024-COJO-399C
C 099	0081971	CAPACITR 2.2 PF 100V CER DISC COJ +-.25P	ER	835-024-COJO-229C
C 100	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 101	0081746	CAPACITR 1.0 PF 500V CER DISC COK +-.25P	ER	831-COKO-109C
C 102	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 103	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 104	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 105	0082006	CAPACITR 3.9 PF 100V CER DISC COJ +-.25P	ER	835-024-COJO-399C
C 106	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 107	0082006	CAPACITR 3.9 PF 100V CER DISC COJ +-.25P	ER	835-024-COJO-399C
C 108	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 109	0070541	CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 110	0070541	CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 111	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 112	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 113	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 114	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 115	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 116	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 117	0085155	CAPACITR .1 MF 250V MET POLYESTER 10%	ITT	PMTZR0,1M250
C 118	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 119	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 120	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 121	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 122	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 123	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 124	0078600	NOT ASSIGNED		
C 125	0078600	NOT ASSIGNED		
C 126	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 127	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 128	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 129	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
CR001	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR002	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR003	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071121	DIODE 1N821 TC REF 6.2V .01% .4W	MOS	1N821
CR006	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR007	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR008	0147396	DIODE PIN K 80-120, X .85-.89, 5 MHZ	XZ	PER CONT. DWG 147396
CR009	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR010	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR011	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR012	0071121	DIODE 1N821 TC REF 6.2V .01% .4W	MOS	1N821
CR013	0071121	DIODE 1N821 TC REF 6.2V .01% .4W	MOS	1N821
CR014	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR015	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
CR016	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR017	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR018	0071121	DIODE 1N821 TC REF 6,2V ,01% ,4W	MOS	1N821
E 001	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
E 002	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
E 003	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
E 004	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
E 005	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004
J 001	0085125	CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2
J 002	0085125	CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2
J 003	0085125	CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2
J 004	0085125	CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2
J 005	0085125	CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2
L 001	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 002	0078600	NOT ASSIGNED		
L 003	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 004	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0145347	INDUCTOR 7,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 007	0145344	INDUCTOR 4,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 008	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 009	0078600	NOT ASSIGNED		
L 010	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 011	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 012	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 013	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 014	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 015	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 016	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 017	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 018	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 019	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 020	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 021	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 022	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 023	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 024	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 025	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 026	0145348	INDUCTOR 8,5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.
L 027	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 028	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 029	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 030	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 031	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 032	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 033	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 034	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 035	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2

PARTS LIST
SERIES 6600 IF AMPLIFIER PWB ASSEMBLY
229030 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
L 036	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 037	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 038	0080599	INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
P 001	0086100	PWB PRINTED COMPONENT		
P 002	0086100	PWB PRINTED COMPONENT		
P 003	0086100	PWB PRINTED COMPONENT		
Q 001	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 002	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 003	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 004	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 006	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 007	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 008	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 009	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 010	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 011	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 012	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 013	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 014	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 015	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 016	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 017	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 018	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 019	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 020	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 021	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 022	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 023	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 002	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 004	0089074	RESISTOR 1,2K OHM 1/4W 5% CARBON FILM		
R 005	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 006	0083875	RESISTOR 487 OHM RN55C 1% MTL FLM	DP	RN55C4870F
R 007	0089054	RESISTOR 180 OHM 1/4W 5% CARBON FILM		
R 008	0089072	RESISTOR 1,0K OHM 1/4W 5% CARBON FILM		
R 009	0083891	RESISTOR 1,50K OHM RN55C 1% MTL FLM	DP	RN55C1501F
R 010	0079743	RESISTOR 750 OHM RN55C 1% MTL FLM	DP	RN55C7500F
R 011	0080380	RESISTOR 2,74K OHM RN55C 1% MTL FLM	DP	RN55C2741F
R 012	0083891	RESISTOR 1,50K OHM RN55C 1% MTL FLM	DP	RN55C1501F
R 013	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 014	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 015	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 016	0089074	RESISTOR 1,2K OHM 1/4W 5% CARBON FILM		
R 017	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 018	0083873	RESISTOR 422 OHM RN55C 1% MTL FLM	DP	RN55C4220F
R 019	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 020	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 021	0089062	RESISTOR 390 OHM 1/4W 5% CARBON FILM		
R 022	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 023	0089108	RESISTOR 33K OHM 1/4W 5% CARBON FILM		
R 024	0079863	RESISTOR 1,21K OHM RN55C 1% MTL FLM	DP	RN55C1211F
R 025	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 026	0079861	RESISTOR 511 OHM RN55C 1% MTL FLM	DP	RN55C5110F
R 027	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 028	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 029	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 030	0083875	RESISTOR 487 OHM RN55C 1% MTL FLM	DP	RN55C4870F
R 031	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 032	0089074	RESISTOR 1,2K OHM 1/4W 5% CARBON FILM		
R 033	0089054	RESISTOR 180 OHM 1/4W 5% CARBON FILM		
R 034	0089072	RESISTOR 1,0K OHM 1/4W 5% CARBON FILM		
R 035	0083891	RESISTOR 1,50K OHM RN55C 1% MTL FLM	DP	RN55C1501F
R 036	0079743	RESISTOR 750 OHM RN55C 1% MTL FLM	DP	RN55C7500F
R 037	0080380	RESISTOR 2,74K OHM RN55C 1% MTL FLM	DP	RN55C2741F
R 038	0083891	RESISTOR 1,50K OHM RN55C 1% MTL FLM	DP	RN55C1501F
R 039	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 040	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 041	0083873	RESISTOR 422 OHM RN55C 1% MTL FLM	DP	RN55C4220F
R 042	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 043	0089074	RESISTOR 1,2K OHM 1/4W 5% CARBON FILM		
R 044	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 045	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 046	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 047	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 048	0078600	NOT ASSIGNED		
R 049	0083846	RESISTOR 42,2 OHM RN55D 1% MTL FLM	DP	RN55D42R2F
R 050	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 051	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 052	0083875	RESISTOR 487 OHM RN55C 1% MTL FLM	DP	RN55C4870F
R 053	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 054	0089076	RESISTOR 1,5K OHM 1/4W 5% CARBON FILM		
R 055	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 056	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 057	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 058	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 059	0078600	NOT ASSIGNED		
R 060	0083846	RESISTOR 42,2 OHM RN55D 1% MTL FLM	DP	RN55D42R2F
R 061	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 062	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 063	0083873	RESISTOR 422 OHM RN55C 1% MTL FLM	DP	RN55C4220F
R 064	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 065	0089074	RESISTOR 1,2K OHM 1/4W 5% CARBON FILM		
R 066	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 067	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 068	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 069	0089080	RESISTOR 2,2K OHM 1/4W 5% CARBON FILM		
R 070	0078600	NOT ASSIGNED		
R 071	0083846	RESISTOR 42,2 OHM RN55D 1% MTL FLM	DP	RN55D42R2F

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 072	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 073	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 074	0083875	RESISTOR 487 OHM RN55C 1% MTL FLM	DP	RN55C4870F
R 075	0089080	RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 076	0089076	RESISTOR 1.5K OHM 1/4W 5% CARBON FILM		
R 077	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 078	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 079	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 080	0089080	RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 081	0078600	NOT ASSIGNED		
R 082	0083846	RESISTOR 42.2 OHM RN55D 1% MTL FLM	DP	RN55D42R2F
R 083	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 084	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 085	0083873	RESISTOR 422 OHM RN55C 1% MTL FLM	DP	RN55C4220F
R 086	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 087	0089074	RESISTOR 1.2K OHM 1/4W 5% CARBON FILM		
R 088	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 089	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 090	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 091	0089080	RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 092	0078600	NOT ASSIGNED		
R 093	0083846	RESISTOR 42.2 OHM RN55D 1% MTL FLM	DP	RN55D42R2F
R 094	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 095	0089044	RESISTOR 68 OHM 1/4W 5% CARBON FILM		
R 096	0083875	RESISTOR 487 OHM RN55C 1% MTL FLM	DP	RN55C4870F
R 097	0089080	RESISTOR 2.2K OHM 1/4W 5% CARBON FILM		
R 098	0089074	RESISTOR 1.2K OHM 1/4W 5% CARBON FILM		
R 099	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 100	0089054	RESISTOR 180 OHM 1/4W 5% CARBON FILM		
R 101	0089072	RESISTOR 1.0K OHM 1/4W 5% CARBON FILM		
R 102	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 103	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 104	0089058	RESISTOR 270 OHM 1/4W 5% CARBON FILM		
R 105	0089064	RESISTOR 470 OHM 1/4W 5% CARBON FILM		
R 106	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 107	0089064	RESISTOR 470 OHM 1/4W 5% CARBON FILM		
R 108	0089084	RESISTOR 3.3K OHM 1/4W 5% CARBON FILM		
R 109	0089100	RESISTOR 15K OHM 1/4W 5% CARBON FILM		
R 110	0089092	RESISTOR 6.8K OHM 1/4W 5% CARBON FILM		
R 111	0089084	RESISTOR 3.3K OHM 1/4W 5% CARBON FILM		
R 112	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 113	0089100	RESISTOR 15K OHM 1/4W 5% CARBON FILM		
R 114	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 115	0089090	RESISTOR 5.6K OHM 1/4W 5% CARBON FILM		
R 116	0089090	RESISTOR 5.6K OHM 1/4W 5% CARBON FILM		
R 117	0089082	RESISTOR 2.7K OHM 1/4W 5% CARBON FILM		
R 118	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 119	0089070	RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 120	0089086	RESISTOR 3.9K OHM 1/4W 5% CARBON FILM		
R 121	0089094	RESISTOR 8.2K OHM 1/4W 5% CARBON FILM		
R 122	0088029	POT 1K OHM 1/2W CER 3/8 SQ VERT ADJ 20T	AB	MT2X102

PARTS LIST
SERIES 6600 IF AMPLIFIER PWB ASSEMBLY
229030 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 123	0089070	RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 124	0088003	POT 10K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH103M
R 125	0088029	POT 1K OHM 1/2W CER 3/8 SQ VERT ADJ 20T	AB	MT2X102
R 127	0089096	RESISTOR 10K OHM 1/4W 5% CARBON FILM		
R 128	0089072	RESISTOR 1.0K OHM 1/4W 5% CARBON FILM		
R 129	0089070	RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 130	0088003	POT 10K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH103M
R 131	0078933	RESISTOR 10.0K OHM RN55C 1% MTL FLM	DP	RN55C1002F
R 132	0089096	RESISTOR 10K OHM 1/4W 5% CARBON FILM		
R 133	0089084	RESISTOR 3.3K OHM 1/4W 5% CARBON FILM		
R 134	0078933	RESISTOR 10.0K OHM RN55C 1% MTL FLM	DP	RN55C1002F
R 135	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 136	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 137	0089056	RESISTOR 220 OHM 1/4W 5% CARBON FILM		
R 138	0083899	RESISTOR 2.26K OHM RN55C 1% MTL FLM	DP	RN55C2261F
R 139	0089100	RESISTOR 15K OHM 1/4W 5% CARBON FILM		
R 140	0088031	POT 50K OHM 1/2W CER 3/8 SQ VERT ADJ 20T	AB	MT2X503
R 141	0089100	RESISTOR 15K OHM 1/4W 5% CARBON FILM		
R 142	0089092	RESISTOR 6.8K OHM 1/4W 5% CARBON FILM		
R 143	0088031	POT 50K OHM 1/2W CER 3/8 SQ VERT ADJ 20T	AB	MT2X503
R 144	0089100	RESISTOR 15K OHM 1/4W 5% CARBON FILM		
R 145	0088030	POT 10K OHM 1/2W CER 3/8 SQ VERT ADJ 20T	AB	MT2X103
R 146	0089094	RESISTOR 8.2K OHM 1/4W 5% CARBON FILM		
R 147	0089086	RESISTOR 3.9K OHM 1/4W 5% CARBON FILM		
R 148	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 149	0089070	RESISTOR 820 OHM 1/4W 5% CARBON FILM		
R 150	0079729	RESISTOR 13.0K OHM RN55C 1% MTL FLM	DP	RN55C1302F
R 151	0089090	RESISTOR 5.6K OHM 1/4W 5% CARBON FILM		
R 152	0089071	RESISTOR 910 OHM 1/4W 5% CARBON FILM		
R 153	0083876	RESISTOR 499 OHM RN55C 1% MTL FLM	DP	RN55C4990F
R 154	0078766	RESISTOR 1.62K OHM RN55C 1% MTL FLM	DP	RN55C1621F
R 155	0083916	RESISTOR 10.5K OHM RN55C 1% MTL FLM	DP	RN55C1052F
R 156	0089072	RESISTOR 1.0K OHM 1/4W 5% CARBON FILM		
R 157	0089062	RESISTOR 390 OHM 1/4W 5% CARBON FILM		
R 158	0089048	RESISTOR 100 OHM 1/4W 5% CARBON FILM		
R 159	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 160	0089040	RESISTOR 47 OHM 1/4W 5% CARBON FILM		
R 161	0089090	RESISTOR 5.6K OHM 1/4W 5% CARBON FILM		
S 001	0087788	SWITCH SLIDE SPDT PC MT EPOXY SEAL	CK	1101M2CBE
TP001	0081258	CONN COAX F FEM TO PC BRD CHSS OR PC MT	GIL	GF-61-A-PC
TP002	0081258	CONN COAX F FEM TO PC BRD CHSS OR PC MT	GIL	GF-61-A-PC
TP003	0081258	CONN COAX F FEM TO PC BRD CHSS OR PC MT	GIL	GF-61-A-PC
TP004	0081258	CONN COAX F FEM TO PC BRD CHSS OR PC MT	GIL	GF-61-A-PC
TP005	0081258	CONN COAX F FEM TO PC BRD CHSS OR PC MT	GIL	GF-61-A-PC
U 001	0084890	IC OP AMP 8L-DIP 70C COMP 741C	MOS	MC1741CP1
U 002	0081840	IC OP AMP 8L-DIP 70C COMP DUAL 741C	NSC	LM1458N
U 003	0081840	IC OP AMP 8L-DIP 70C COMP DUAL 741C	NSC	LM1458N

PARTS LIST
SERIES 6600 VIDEO DEMODULATOR PWB ASSEMBLY
229035

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229035PPC	PREFORM FOR VIDEO DEMODULATOR PCB		
	0229037	VIDEO DEMODULATOR PWB SCHEMATIC DIAGRAM		
	0229038	VIDEO DEMODULATOR PWB TEST PROCEDURE		
	0229039	VIDEO DEMODULATOR PWB BLOCK DIAGRAM		
001	0229036	PWB VIDEO DEMODULATOR		
002	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
003	0123468	SHIELD CAN SMALL	JLO	PER SA DWG 123468
004	0081666	SOCKET TO-5 CASE 3-PIN	RBN	SD5173
AT001	0035878	ATTNUATR 9 DB FIXED T-PAD TO-5 CASE	NAM	KM3
AT002	0035870	ATTNUATR 0 DB FIXED T-PAD TO-5 CASE	NAM	KM11
C 001	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 004	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 005	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 006	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 007	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 008	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 009	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 010	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 011	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 012	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 013	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 014	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 015	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 016	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 017	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 018	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 019	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 020	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 021	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 022	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 023	0077512	CAPACITR 24 PF 500V SILVER MICA 5%	CD	CD15ED240J03
C 024	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 025	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 026	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 027	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 028	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 029	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 030	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 031	0087125	CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000
C 032	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 033	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 034	0035656	CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS
C 035	0035656	CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS
C 036	0035656	CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS
C 038	0078810	CAPACITR 240 PF 500V SILVER MICA 1%	SGC	D155C241F03
C 039	0082972	CAPACITR .0082 MF 500V SILVER MICA 1%	SGC	D305F822F03
C 040	0078810	CAPACITR 240 PF 500V SILVER MICA 1%	SGC	D155C241F03

PARTS LIST
SERIES 6600 VIDEO DEMODULATOR PWB ASSEMBLY
229035 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 041	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 042	0077512	CAPACITR 24 PF 500V SILVER MICA 5%	CD	CD15ED240J03
C 043	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 044	0037113	CAPACITR .01 MF 50V CER DISC Y5P 20%	CRL	XXUK50-103
C 045	0070490	CAPACITR 30 PF 500V SILVER MICA 5%	CD	CD15ED300J03
C 046	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	CD	CD15CD150J03
C 047	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	CD	CD15ED200J03
C 048	0073493	CAPACITR 18 PF 500V SILVER MICA 5%	CD	CD15CD180J03
C 049	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 052	0087125	CAPACITR 3,3-18 PF MIN CER PC MT	SP	GKU 18000
C 053	0080146	CAPACITR 675 PF 500V SILVER MICA 1%	SGC	D155CXXXF03 675 PF
C 057	0087125	CAPACITR 3,3-18 PF MIN CER PC MT	SP	GKU 18000
CR001	0081454	DIODE MPN3401 SWITCH VHF SIL PIN	MOS	MPN3401
CR002	0081454	DIODE MPN3401 SWITCH VHF SIL PIN	MOS	MPN3401
CR003	0076705	DIODE 1N4733A SI ZEN 5,1V 5% 1W	MOS	1N4733A
CR004	0085348	DIODE KV2103 VARACTOR SIL WIRE LEADS	KSW	KV2103
CR005	0085348	DIODE KV2103 VARACTOR SIL WIRE LEADS	KSW	KV2103
CR006	0085349	DIODE KV2803 VARACTOR SIL WIRE LEADS	KSW	KV2803
CR007	0071108	DIODE 1N87A DET VIDEO GER PT CONTACT	GE	1N87A
CR008	0071108	DIODE 1N87A DET VIDEO GER PT CONTACT	GE	1N87A
CR009	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
DL001	0228971	DELAY LINE		
E 001	0081718	CORE BEAD FERRITE 7D .138X,037X,150L GRN	STK	57-1413
E 002	0081718	CORE BEAD FERRITE 7D .138X,037X,150L GRN	STK	57-1413
J 001	0073318	WIRE 22 BUS	BM	8021
L 001	0082567	INDUCTOR 12,5T #22 START MP2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082567	INDUCTOR 12,5T #22 START MP2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0081850	INDUCTOR 2,7 UH SUBMIN UNSHLD 5%	DP	IR-2
L 004	0085550	INDUCTOR 10 1/2T #22 HORIZ PC MT AIR COR	SML	LM-2 BY DESCRIPTION
L 005	0085550	INDUCTOR 10 1/2T #22 HORIZ PC MT AIR COR	SML	LM-2 BY DESCRIPTION
L 006	0079169	INDUCTOR 1,0 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0035986	INDUCTOR .437 UH 25 MHZ J-CORE 8,5T BLUE	CCT	PER CONT. DWG.
L 008	0080000	INDUCTOR 6,8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 009	0082345	INDUCTOR .82 UH SUBMIN UNSHLD 10%	DP	IR-2
L 010	0035981	INDUCTOR .085 UH 50 MHZ J-CORE 2,5T BRN	CCT	PER CONT. DWG.
L 011	0035986	INDUCTOR .437 UH 25 MHZ J-CORE 8,5T BLUE	CCT	PER CONT. DWG.
L 012	0078508	INDUCTOR 0,2 UH SUBMIN UNSHLD 10%	DP	IR-2
L 013	0229074	TOROID INDUCTOR 13T,0,2 MH		
Q 001	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 002	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 003	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 004	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 005	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
Q 006	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 007	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947

PARTS LIST
SERIES 6600 VIDEO DEMODULATOR PWB ASSEMBLY
229035 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
Q 010	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 011	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 012	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 013	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 015	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 016	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
R 001	0072019	RESISTOR 8,2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 002	0077598	POT 10K OHM 3/4W CER RECT 3/4W LONG 15T	BLI	3009P-1-103
R 003	0072077	RESISTOR 47K OHM 1/4W 10% COMP	AB	RCR07G473KS
R 004	0071973	RESISTOR 1,8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 005	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 006	0072207	RESISTOR 2,2 MEG 1/4W 10% COMP	AB	RCR07G225KS
R 007	0071907	RESISTOR 220 OHM 1/4W 10% COMP	AB	RCR07G221KS
R 008	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 009	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 011	0075628	RESISTOR 300 OHM 1/4W 5% COMP	AB	RCR07G301JS
R 012	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 013	0071973	RESISTOR 1,8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 014	0074700	RESISTOR 820 OHM 1/4W 5% COMP	AB	RCR07G821JS
R 015	0071918	RESISTOR 330 OHM 1/4W 10% COMP	AB	RCR07G331KS
R 016	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 017	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 018	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 020	0076707	RESISTOR 2,7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 021	0076707	RESISTOR 2,7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 022	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 023	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 024	0088002	POT 50K OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR503M
R 025	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 026	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 027	0076707	RESISTOR 2,7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 028	0076707	RESISTOR 2,7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 029	0071907	RESISTOR 220 OHM 1/4W 10% COMP	AB	RCR07G221KS
R 030	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 031	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 032	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 033	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 034	0071907	RESISTOR 220 OHM 1/4W 10% COMP	AB	RCR07G221KS
R 035	0071873	RESISTOR 56 OHM 1/4W 10% COMP	AB	RCR07G560KS
R 036	0071907	RESISTOR 220 OHM 1/4W 10% COMP	AB	RCR07G221KS
R 037	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 038	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 039	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 040	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 041	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 042	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 043	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 044	0082346	POT 100 OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR101M
R 045	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 046	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 047	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 048	0071918	RESISTOR 330 OHM 1/4W 10% COMP	AB	RCR07G331KS
R 049	0074700	RESISTOR 820 OHM 1/4W 5% COMP	AB	RCR07G821JS
R 050	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 051	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 052	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 053	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 054	0088001	POT 2K OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR202M
R 055	0071887	RESISTOR 100 OHM 1/4W 10% COMP	AB	RCR07G101KS
R 056	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 057	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 058	0088001	POT 2K OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR202M
R 059	0083860	RESISTOR 154 OHM RN55C 1% MTL FLM	DP	RN55C1540F
R 060	0083859	RESISTOR 147 OHM RN55C 1% MTL FLM	DP	RN55C1470F
R 061	0083860	RESISTOR 154 OHM RN55C 1% MTL FLM	DP	RN55C1540F
R 062	0083859	RESISTOR 147 OHM RN55C 1% MTL FLM	DP	RN55C1470F
R 063	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 064	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 065	0076723	RESISTOR 39 OHM 1/4W 10% COMP	AB	RCR07G390KS
R 066	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS
R 067	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS
R 068	0082346	POT 100 OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR101M
R 069	0082388	POT 500 OHM 1/2W CER 1/4 DIA VERT ADJ	H	62PR500
R 070	0082388	POT 500 OHM 1/2W CER 1/4 DIA VERT ADJ	H	62PR500
R 071	0071931	RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 072	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 073	0071931	RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 074	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 075	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 076	0071897	RESISTOR 150 OHM 1/4W 10% COMP	AB	RCR07G151KS
R 077	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 078	0071897	RESISTOR 150 OHM 1/4W 10% COMP	AB	RCR07G151KS
R 079	0081996	RESISTOR 56 OHM 1/4W 5% COMP	AB	RCR07G560JS
R 080	0074722	RESISTOR 4.7K OHM 1/4W 5% COMP	AB	RCR07G472JS
R 081	0074702	RESISTOR 1.0K OHM 1/4W 5% COMP	AB	RCR07G102JS
R 082	0074702	RESISTOR 1.0K OHM 1/4W 5% COMP	AB	RCR07G102JS
R 083	0075651	RESISTOR 2.0K OHM 1/4W 5% COMP	AB	RCR07G202JS
R 084	0071917	RESISTOR 330 OHM 1/4W 5% COMP	AB	RCR07G331JS
R 085	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 087	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 088	0083099	RESISTOR 1.30K OHM RN55C 1% MTL FLM	DP	RN55C1301F
R 089	0078870	RESISTOR 274 OHM RN60C 1% MTL FLM	DP	RN60C2740F
R 090	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 091	0074714	RESISTOR 3.3K OHM 1/4W 5% COMP	AB	RCR07G332JS
R 092	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 093	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 094	0087736	POT 250 OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR250M
R 095	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 096	0074722	RESISTOR 4.7K OHM 1/4W 5% COMP	AB	RCR07G472JS
R 097	0074702	RESISTOR 1.0K OHM 1/4W 5% COMP	AB	RCR07G102JS
R 098	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 099	0075651	RESISTOR 2.0K OHM 1/4W 5% COMP	AB	RCR07G202JS
R 100	0071917	RESISTOR 330 OHM 1/4W 5% COMP	AB	RCR07G331JS
R 101	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 103	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 104	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 105	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
T 001	0228970	TORROID TRANSFORMER		
T 002	0228970	TORROID TRANSFORMER		
TP001	0081258	CONN COAX F FEM TO PC BRD CH&S OR PC MT	GIL	GF-61-A-PC
TP002	0081258	CONN COAX F FEM TO PC BRD CH&S OR PC MT	GIL	GF-61-A-PC
U 001	0078977	IC OP AMP BL-TO5 70C COMP 741C	MOS	MC1741CG
U 002	0084614	IC ECL GATE NOR/OR 4-IN DUAL	MOS	MC1660L

PARTS LIST
SERIES 6600 VIDEO CLAMP PWB ASSEMBLY
229040

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229040PPC	PREFORM FOR VIDEO CLAMP PC ASSY		
001	0229041	PWB VIDEO CLAMP		
002	0229042	SCHEMATIC VIDEO CLAMP		
003	0229043	TEST PROCEDURE VIDEO CLAMP		
004	0229044	BLOCK DIAGRAM VIDEO CLAMP		
005	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
006	0079335	PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP
007	0073318	WIRE 22 BUS	BM	8021
C 001	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 004	0073497	CAPACITR 180 PF 500V SILVER MICA 5%	CD	CD15FD181J03
C 005	0070529	CAPACITR 220 PF 500V SILVER MICA 5%	CD	CD15FD221J03
C 006	0081824	CAPACITR 79 PF 100V SILVER MICA 2%	SGC	D151C790G03
C 007	0081743	CAPACITR 75 PF 500V SILVER MICA 5%	CD	CD15ED750J03
C 008	0079073	CAPACITR 320 PF 500V SILVER MICA 5%	CD	CD15FD321J03
C 009	0070532	CAPACITR 300 PF 500V SILVER MICA 5%	CD	CD15FD301J03
C 010	0070534	CAPACITR 330 PF 500V SILVER MICA 5%	CD	CD15FD331J03
C 011	0070529	CAPACITR 220 PF 500V SILVER MICA 5%	CD	CD15FD221J03
C 012	0070529	CAPACITR 220 PF 500V SILVER MICA 5%	CD	CD15FD221J03
C 013	0073498	CAPACITR 820 PF 500V SILVER MICA 5%	CD	CD19FD821J03
C 014	0081115	CAPACITR 935 PF 100V SILVER MICA 5%	SGC	D151CXXXJ03 935 PF
C 015	0073498	CAPACITR 820 PF 500V SILVER MICA 5%	CD	CD19FD821J03
C 016	0083114	CAPACITR 750 PF 100V SILVER MICA 2%	SGC	D151F751G03
C 017	0078812	CAPACITR 260 PF 500V SILVER MICA 1%	SGC	D155C261F03
C 018	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 019	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 020	0070518	CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0070475	CAPACITR 12 PF 1 KV CER DISC S2L 10%	CRL	DD-120
C 022	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 023	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 025	0073491	CAPACITR 12 PF 500V SILVER MICA 5%	CD	CD15CD120J03
C 026	0073494	CAPACITR 22 PF 500V SILVER MICA 5%	CD	CD15ED220J03
C 027	0073494	CAPACITR 22 PF 500V SILVER MICA 5%	CD	CD15ED220J03
C 028	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 030	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 031	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 035	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 036	0070569	CAPACITR .01 MF 1KV CER DISC Z5U 20%	CRL	DD1032
C 037	0037096	CAPACITR .1 MF 100V MET POLYESTER 5%	PSY	160/,1/5/100/C
C 038	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 039	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T3628106K025AS
C 040	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 041	0081210	CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z

PARTS LIST
SERIES 6600 VIDEO CLAMP PWB ASSEMBLY
229040 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 043	0081525	CAPACITR .003 MF 500V SILVER MICA 5%	SGC	CM06FD302J03
C 044	0081867	CAPACITR 470 PF 100V CER DISC X5F 10%	ER	8131-000-X5F0-471K
C 045	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081099	CAPACITR .0047 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-472K
C 047	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 048	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 049	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 050	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 051	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
C 052	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 053	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 054	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
CR001	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR002	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR007	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR008	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR009	0080219	DIODE 1N4732A SI ZEN 4.7V 5% 1W	MOS	1N4732A
CR010	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR011	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR012	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
E 001	0081718	CORE BEAD FERRITE 7D .136X.037X.150L GRN	STK	57-1413
L 001	0083726	INDUCTOR 2.75 UH PC MT RANGE +-.35UH MIN	CDB	CB6541-42
L 002	0086610	INDUCTOR 1.35 UH PC MT RANGE +-10%	CDB	CD6541-54
L 003	0228968	INDUCTOR 9UH CENTER TAPPED		
L 004	0228968	INDUCTOR 9UH CENTER TAPPED		
L 005	0228969	INDUCTOR 1.4UH		
L 006	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0078850	TRANSSTR 2N2219 NPN SIL	FSC	2N2219
Q 002	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0078850	TRANSSTR 2N2219 NPN SIL	FSC	2N2219
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 006	0079660	TRANSSTR 2N4093 FET N-CHNL JUNC	MOS	2N4093
Q 007	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 008	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 009	0076446	TRANSSTR 2N4222 FET N-CHNL JUNC	MOS	2N4222
Q 010	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 002	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0071908	RESISTOR 220 OHM 1/2W 10% COMP	AB	RCR20G221KS
R 005	0083089	RESISTOR 75.0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F

PARTS LIST
SERIES 6600 VIDEO CLAMP PWB ASSEMBLY
229040 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 006	0083854	RESISTOR 86,6 OHM RN55C 1% MTL FLM	DP	RN55C86R6F
R 007	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 008	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 009	0083878	RESISTOR 562 OHM RN55C 1% MTL FLM	DP	RN55C5620F
R 010	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 011	0083878	RESISTOR 562 OHM RN55C 1% MTL FLM	DP	RN55C5620F
R 012	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 013	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 014	0071917	RESISTOR 330 OHM 1/4W 5% COMP	AB	RCR07G331JS
R 015	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 016	0074714	RESISTOR 3,3K OHM 1/4W 5% COMP	AB	RCR07G332JS
R 017	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 018	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 019	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 020	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 021	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 022	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 023	0082651	RESISTOR 910 OHM 1/4W 5% COMP	AB	RCR07G911JS
R 024	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 025	0083089	RESISTOR 75,0 OHM RN55C 1% MTL FLM	DP	RN55C75R0F
R 026	0083912	RESISTOR 7,15K OHM RN55C 1% MTL FLM	DP	RN55C7151F
R 027	0083912	RESISTOR 7,15K OHM RN55C 1% MTL FLM	DP	RN55C7151F
R 028	0083912	RESISTOR 7,15K OHM RN55C 1% MTL FLM	DP	RN55C7151F
R 029	0078933	RESISTOR 10,0K OHM RN55C 1% MTL FLM	DP	RN55C1002F
R 030	0088032	RESISTOR 26,7K OHM RN55C 1% MTL FLM	DP	RN55C2672F
R 031	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 032	0072019	RESISTOR 8,2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 033	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 034	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 035	0084166	RESISTOR 8,25K OHM RN55C 1% MTL FLM	DP	RN55C8251F
R 036	0083931	RESISTOR 33,2K OHM RN55C 1% MTL FLM	DP	RN55C3322F
R 037	0072011	RESISTOR 5,6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 038	0071908	RESISTOR 220 OHM 1/2W 10% COMP	AB	RCR20G221KS
R 039	0075628	RESISTOR 300 OHM 1/4W 5% COMP	AB	RCR07G301JS
R 040	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 041	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 042	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 043	0087782	RESISTOR 887 OHM RN55C 1% MTL FLM	DP	RN55C8870F
R 044	0083925	RESISTOR 22,6K OHM RN55C 1% MTL FLM	DP	RN55C2262F
R 045	0071966	RESISTOR 1,5K OHM 1/4W 10% COMP	AB	RCR07G152KS
R 046	0071966	RESISTOR 1,5K OHM 1/4W 10% COMP	AB	RCR07G152KS
R 047	0071966	RESISTOR 1,5K OHM 1/4W 10% COMP	AB	RCR07G152KS
R 048	0071931	RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 049	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 050	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 051	0071973	RESISTOR 1,8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 052	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 053	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 054	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 055	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 056	0071887	RESISTOR 100 OHM 1/4W 10% COMP	AB	RCR07G101KS
R 057	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 058	0072207	RESISTOR 2,2 MEG 1/4W 10% COMP	AB	RCR07G225KS
R 059	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 060	0072093	RESISTOR 68K OHM 1/4W 10% COMP	AB	RCR07G683KS
R 061	0072207	RESISTOR 2,2 MEG 1/4W 10% COMP	AB	RCR07G225KS
R 062	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 063	0072131	RESISTOR 180K OHM 1/4W 10% COMP	AB	RCR07G184KS
R 064	0071931	RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 065	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 066	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 067	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
U 001	0087784	IC AMPL CASCODE RF/DC DIFF IN 8L-TO5-DIL	RCA	CA3028AS
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 004	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 005	0084888	IC COMPARATOR-VOLTAGE 8L-TO5	NSC	LM311N

PARTS LIST
SERIES 6600 PROGRAM AUDIO PWB ASSEMBLY
229050

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229050PPC	PREFORM FOR AUDIO DEMODULATOR PCB		
001	0229051	PROGRAM AUDIO PWB		
001	0229052	PROGRAM AUDIO SCHEMATIC DIAGRAM		
003	0229053	PROGRAM AUDIO TEST PROCEDURE		
004	0229054	PROGRAM AUDIO BLOCK DIAGRAM		
005	0228963	CLAMP AND AUDIO BOARD OUTLINE		
006	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
007	0123468	SHIELD CAN SMALL	JLO	PER SA DWG 123468
C 001	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	CD	CD19FD681J03
C 004	0084559	CAPACITR 750 PF 500V SILVER MICA 5%	CD	CD19FD751J03
C 005	0073490	CAPACITR 5 PF 500V SILVER MICA +-.5PF	CD	CD15CD050D03
C 006	0082622	CAPACITR 4,5-20 PF MIN CER DISC PC MT	STE	78-TRIKO-02 4,5/20
C 007	0070534	CAPACITR 330 PF 500V SILVER MICA 5%	CD	CD15FD331J03
C 008	0082622	CAPACITR 4,5-20 PF MIN CER DISC PC MT	STE	78-TRIKO-02 4,5/20
C 009	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 010	0070525	CAPACITR 150 PF 1KV CER DISC S3N 10%	CRL	DD-151
C 011	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	CD	CD15ED330J03
C 012	0078974	CAPACITR 620 PF 500V SILVER MICA 5%	CD	CD19FD621J03
C 013	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	CD	CD19FD681J03
C 014	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 018	0070509	CAPACITR 68 PF 500V SILVER MICA 5%	CD	CD15ED680J03
C 019	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	CD	CD15FD271J03
C 020	0070518	CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0081536	CAPACITR 9-50 PF MIN PC MT	AE	MT10MA/550
C 022	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 023	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0073496	CAPACITR 56 PF 500V SILVER MICA 5%	CD	CD15ED560J03
C 025	0081536	CAPACITR 9-50 PF MIN PC MT	AE	MT10MA/550
C 026	0070541	CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 028	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0082969	CAPACITR .001 MF 500V SILVER MICA 1%	SGC	D195F102F03
C 031	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 036	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 037	0070559	CAPACITR .0051 MF 300V SILVER MICA 1%	CD	CD19FD512F03
C 039	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 041	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 043	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 044	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 045	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081995	CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
CR001	0071110	DIODE 1N277 GER 100V 75MA	SY	1N277
CR002	0076448	DIODE 1N4742A SI ZEN 12V 5% 1W	MOS	1N4742
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
J 001	0073318	WIRE 22 BUS	BM	8021
J 002	0073318	WIRE 22 BUS	BM	8021
J 003	0073318	WIRE 22 BUS	BM	8021
L 001	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 004	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072068	RESISTOR 39K OHM 1/4W 10% COMP	AB	RCR07G393KS
R 002	0072059	RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 003	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 005	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 007	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 008	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 009	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 010	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 011	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 012	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 013	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	AB	RCR07G152KS
R 014	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 015	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 016	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 017	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 018	0081997	RESISTOR 91 OHM 1/4W 5% COMP	AB	RCR07G910JS
R 019	0088028	RESISTOR 2.94K OHM RN55C 1% MTL FLM	DP	RN55C2941F
R 020	0088023	RESISTOR 475 OHM RN55C 1% MTL FLM	DP	RN55C4750F
R 021	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 022	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 023	0078927	RESISTOR 1.65K OHM RN55C 1% MTL FLM	DP	RN55C1651F
R 024	0081735	RESISTOR 36 OHM 1/4W 5% COMP	AB	RCR07G360JS
R 025	0079010	RESISTOR 590 OHM RN55C 1% MTL FLM	DP	RN55C5900F
R 026	0082446	RESISTOR 12 OHM 1/4W 5% COMP	AB	RCR07G120JS

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 027	0071977	RESISTOR 2,2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 028	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 029	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071951	RESISTOR 1,0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 031	0080197	RESISTOR 14,7K OHM RN55C 1% MTL FLM	DP	RN55C1472F
R 032	0071977	RESISTOR 2,2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 033	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 034	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 035	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 036	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 037	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 038	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 039	0082678	RESISTOR 4,7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 040	0082678	RESISTOR 4,7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 041	0079719	RESISTOR 5,23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 042	0071982	RESISTOR 2,7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 043	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 044	0072002	RESISTOR 4,7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 045	0079719	RESISTOR 5,23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 046	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 047	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 048	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 049	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 050	0082678	RESISTOR 4,7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 051	0082678	RESISTOR 4,7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 052	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 053	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 054	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 055	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
U 001	0084009	IC AMPL IF/QUAD DET 14L-DIP	MOS	MC1357P
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP

PARTS LIST
SERIES 6600 4.5-MHZ CONVERTER PWB ASSEMBLY
229045

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229047	4.5 MHZ CONVERTER SCHEMATIC		
	0229048	4.5 MHZ CONVERTER TEST PROCEDURE		
	0229049	4.5 MHZ CONVERTER BLOCK DIAGRAM		
001	0229046	PWB 4.5 MHZ CONVERTER		
002	0082827	SOCKET PIN .060-.062 CLOSED BOTTOM	CTC	450-3326-01-06-00
003	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
C 001	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 004	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 005	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 006	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 007	0081101	CAPACITR 1 MF 50V CER MONO 20%	ER	8131-050-651-105M
C 008	0070549	CAPACITR .0015 MF 1KV CER DISC Z5U GMV	CRL	DD152G
C 009	0081210	CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 010	0079172	CAPACITR 5.5-18 PF MIN CER DISC PC MT	ER	538-011 A 5.5-18
C 011	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 012	0081210	CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 013	0081210	CAPACITR .01 MF 50V CER MONO X7R 10%	ER	8121-050-X7R-103K
C 014	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0081033	CAPACITR 73 PF 500V SILVER MICA 2%	SGC	D155C730G03
C 016	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0070527	CAPACITR 200 PF 500V SILVER MICA 5%	CD	CD15FD201J03
C 018	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 019	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 020	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 021	0070534	CAPACITR 330 PF 500V SILVER MICA 5%	CD	CD15FD331J03
C 022	0081098	CAPACITR .47 MF 50V CER MONO 20%	ER	8131-050-651-474M
C 023	0081109	CAPACITR 47 MF 20V SOLID TANT POL 10%	KEM	T362C476K020AS
C 024	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 025	0070490	CAPACITR 30 PF 500V SILVER MICA 5%	CD	CD15ED300J03
C 026	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	CD	CD15FD121J03
C 027	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 028	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 029	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 030	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 031	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0081446	CAPACITR 50 PF 500V SILVER MICA 5%	CD	CD15ED500J03
C 034	0077153	CAPACITR 130 PF 500V SILVER MICA 5%	CD	CD15FD131J03
C 035	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	CD	CD15ED620J03
C 036	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 037	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 038	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 039	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 040	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 041	0080148	CAPACITR 10 MF 20V SOLID TANT POL 20%	KEM	T362B106M020AS
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 043	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
CR001	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR002	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0085003	DIODE MV209 VARACTOR SIL RADIAL LEADS	MOS	MV209
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
DS001	0086296	LAMP LED RED SIDE PINS PC MT 1.9V 20MA	DI	550-0405
E 001	0081718	CORE BEAD FERRITE 7D .138X.037X.150L GRN	STK	57-1413
J 001	0086334	SOCKET 6 PIN SINGLE IN LINE PC MT	AMP	1-583773-3
L 001	0082598	INDUCTOR 39 UH SUBMIN UNSHLD 10%	DP	IR-2
L 002	0078975	INDUCTOR 15 UH SUBMIN UNSHLD 10%	DP	IR-2
L 003	0079926	INDUCTOR 10 UH SUBMIN UNSHLD 10%	DP	IR-2
L 004	0077670	INDUCTOR 33 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0079317	INDUCTOR 27 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0078046	INDUCTOR 3.3 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0078046	INDUCTOR 3.3 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0076446	TRANSSTR 2N4222 FET N-CHNL JUNC	MOS	2N4222
Q 003	0076446	TRANSSTR 2N4222 FET N-CHNL JUNC	MOS	2N4222
Q 004	0035669	TRANSSTR 2N5179 SIL NPN	MOS	2N5179
R 001	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 002	0071887	RESISTOR 100 OHM 1/4W 10% COMP	AB	RCR07G101KS
R 003	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 004	0072059	RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 005	0087779	POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M
R 006	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 007	0072093	RESISTOR 68K OHM 1/4W 10% COMP	AB	RCR07G683KS
R 008	0072088	RESISTOR 56K OHM 1/4W 10% COMP	AB	RCR07G563KS
R 009	0072176	RESISTOR 680K OHM 1/4W 10% COMP	AB	RCR07G684KS
R 010	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 011	0071993	RESISTOR 3.9K OHM 1/4W 10% COMP	AB	RCR07G392KS
R 012	0087736	POT 250 OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR250M
R 013	0071873	RESISTOR 56 OHM 1/4W 10% COMP	AB	RCR07G560KS
R 014	0084085	RESISTOR 16.5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 015	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 016	0084085	RESISTOR 16.5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 017	0084166	RESISTOR 8.25K OHM RN55C 1% MTL FLM	DP	RN55C8251F
R 018	0084085	RESISTOR 16.5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 019	0082148	RESISTOR 53.6K OHM RN60C 1% MTL FLM	DP	RN60C5362F
R 020	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	AB	RCR07G332KS
R 021	0072189	RESISTOR 1.0 MEG 1/4W 10% COMP	AB	RCR07G105KS
R 022	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 023	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 024	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 025	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 026	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS
R 027	0072014	RESISTOR 6.8K OHM 1/4W 10% COMP	AB	RCR07G682KS
R 028	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 029	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 030	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 031	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 032	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 033	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 034	0072138	RESISTOR 220K OHM 1/4W 10% COMP	AB	RCR07G224KS
R 035	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 036	0071853	RESISTOR 27 OHM 1/4W 10% COMP	AB	RCR07G270KS
R 037	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 038	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 039	0072195	RESISTOR 1.2 MEG 1/4W 10% COMP	AB	RCR07G125KS
R 040	0072034	RESISTOR 12K OHM 1/4W 10% COMP	AB	RCR07G123KS
R 041	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 042	0072034	RESISTOR 12K OHM 1/4W 10% COMP	AB	RCR07G123KS
R 043	0072034	RESISTOR 12K OHM 1/4W 10% COMP	AB	RCR07G123KS
R 044	0072214	RESISTOR 4.7 MEG 1/4W 10% COMP	AB	RCR07G475KS
R 045	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 046	0071920	RESISTOR 390 OHM 1/4W 10% COMP	AB	RCR07G391KS
R 047	0076707	RESISTOR 2.7 OHM 1/4W 10% COMP	AB	RCR07G2R7KS
R 048	0072054	RESISTOR 22K OHM 1/4W 10% COMP	AB	RCR07G223KS
R 049	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	AB	RCR07G332KS
R 050	0087779	POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M
R 051	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	AB	RCR07G182KS
R 052	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 052	0071938	RESISTOR 680 OHM 1/4W 10% COMP	AB	RCR07G681KS
R 053	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
TP001	0071365	JACK TEST PC BLUE	J	105-760
TP002	0075407	JACK TEST PC GREEN	J	105-754
TP003	0071364	JACK TEST PC BLACK	J	105-753
U 001	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0083021	IC CMOS COUNTER 12-BIT BINARY	MOS	MC14040BCL
U 004	0086219	IC PHASE/FREQ DET CMOS FOR PLL 16L-DIP	MOS	MC14046BCL
U 005	0083021	IC CMOS COUNTER 12-BIT BINARY	MOS	MC14040BCL
U 006	0083017	IC CMOS GATE NOR 2-IN QUAD	MOS	MC14001BCL
U 007	0082382	IC AMPL CASCODE RF/IF DIFF IN 10L-TO100	MOS	MC1550G
Y 001	0153237	XTAL 1.125 MHZ		

PARTS LIST
SERIES 6600 AUDIO MODULATION LIMITER OPTION
153189

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0106044	COVER DIPEKER		
002	0077506	SCREW 2-56 X 1/4 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION
003	0086662	JUMPER FLAT CABLE 6-COND FLEXIBLE	AMP	86942-5
004	0105231	PIN CONNECTOR		
005	0153188	PWB AUDIO MOD,LIMITER		
C 001	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
C 002	0035654	CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
C 003	0080139	CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 004	0080139	CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
CR001	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR002	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0078696	DIODE 1N746A SI ZEN 3,3V 5% ,4W	TI	1N746A
Q 001	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 002	0072026	RESISTOR 10K OHM 1/4W 10% COMP	AB	RCR07G103KS
R 003	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 004	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 005	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 006	0072019	RESISTOR 8,2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 007	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 008	0084085	RESISTOR 16,5K OHM RN55C 1% MTL FLM	DP	RN55C1652F
R 009	0084166	RESISTOR 8,25K OHM RN55C 1% MTL FLM	DP	RN55C8251F
R 010	0086663	RESISTOR 57,6K OHM RN55C 1% MTL FLM	DP	RN55C5762F
R 011	0072019	RESISTOR 8,2K OHM 1/4W 10% COMP	AB	RCR07G822KS
R 012	0072159	RESISTOR 390K OHM 1/4W 10% COMP	AB	RCR07G394KS
R 013	0071836	RESISTOR 10 OHM 1/4W 10% COMP	AB	RCR07G100KS
R 014	0071993	RESISTOR 3,9K OHM 1/4W 10% COMP	AB	RCR07G392KS
R 015	0072064	RESISTOR 33K OHM 1/4W 10% COMP	AB	RCR07G333KS
R 016	0072116	RESISTOR 120K OHM 1/4W 10% COMP	AB	RCR07G124KS
R 017	0071887	RESISTOR 100 OHM 1/4W 10% COMP	AB	RCR07G101KS
U 001	0088019	IC OP AMP 8L-DIP 125C TRANSCNDUCTNCE	RCA	CA3080E
U 002	0086218	IC OP AMP 14L-DIP 125C COMP QUAD 741	TI	RC4136N

PARTS LIST
SERIES 6600 6.2-MHZ SUBCARRIER DEMODULATOR
PWB ASSEMBLY
229055

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229051	PROGRAM AUDIO PWB		
001	0229057	PROGRAM AUDIO SCHEMATIC DIAGRAM		
003	0229058	PROGRAM AUDIO TEST PROCEEDURE		
004	0229054	PROGRAM AUDIO BLOCK DIAGRAM		
005	0228963	CLAMP AND AUDIO BOARD OUTLINE		
006	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
007	0123468	SHIELD CAN SMALL	JLO	PER SA DWG 123468
008	0229059	LABEL 6.2 MHZ		
C 001	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0075196	CAPACITR .0018 MF 500V SILVER MICA 5%	CD	CD19FD182J03
C 004	0081332	CAPACITR 950 PF 100V SILVER MICA 5%	SGC	D151C951J03
C 005	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 006	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STZ	7S-TRIKO-02 4.5/20
C 007	0078974	CAPACITR 620 PF 500V SILVER MICA 5%	CD	CD19FD621J03
C 008	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STZ	7S-TRIKO-02 4.5/20
C 009	0073493	CAPACITR 18 PF 500V SILVER MICA 5%	CD	CD15CD180J03
C 010	0070525	CAPACITR 150 PF 1KV CER DISC S3N 10%	CRL	DD-151
C 011	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	CD	CD15ED330J03
C 012	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 013	0081330	CAPACITR 886 PF 100V SILVER MICA 5%	SGC	D151CXXXJ03 886 PF
C 014	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 018	0081743	CAPACITR 75 PF 500V SILVER MICA 5%	CD	CD15ED750J03
C 019	0080144	CAPACITR 430 PF 500V SILVER MICA 1%	SGC	D155C431F03
C 020	0070518	CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0081536	CAPACITR 5-50 PF MIN PC MT	AE	HT10MA/550
C 022	0073491	CAPACITR 12 PF 500V SILVER MICA 5%	CD	CD15CD120J03
C 023	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	CD	CD15ED620J03
C 025	0081536	CAPACITR 5-50 PF MIN PC MT	AE	HT10MA/550
C 026	0070541	CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 027	0080039	CAPACITR 10 MF 20V SOLID TANT POL 10%	KEM	CS13BE106K
C 028	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0082969	CAPACITR .001 MF 500V SILVER MICA 1%	SGC	D195F102F03
C 030	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 031	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 035	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 036	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 037	0078600	NOT ASSIGNED		
C 038	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 039	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 040	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 041	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z

PARTS LIST
SERIES 6600 6.2-MHZ SUBCARRIER DEMODULATOR
PWB ASSEMBLY
229055 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 043	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 044	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 045	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081995	CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
CR001	0071110	DIODE 1N277 GER 100V 75MA	SY	1N277
CR002	0076448	DIODE 1N4742A SI ZEN 12V 5% 1W	MOS	1N4742
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
L 001	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 004	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072068	RESISTOR 39K OHM 1/4W 10% COMP	AB	RCR07G393KS
R 002	0072059	RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 003	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 005	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 007	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 008	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 009	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 010	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 011	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 012	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 013	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 014	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 015	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 016	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 017	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 018	0081997	RESISTOR 91 OHM 1/4W 5% COMP	AB	RCR07G910JS
R 019	0088028	RESISTOR 2.94K OHM RN55C 1% MTL FLM	DP	RN55C2941F
R 020	0088023	RESISTOR 475 OHM RN55C 1% MTL FLM	DP	RN55C4750F
R 021	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 022	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 023	0078927	RESISTOR 1.65K OHM RN55C 1% MTL FLM	DP	RN55C1651F
R 024	0081735	RESISTOR 36 OHM 1/4W 5% COMP	AB	RCR07G360JS
R 025	0079010	RESISTOR 590 OHM RN55C 1% MTL FLM	DP	RN55C5900F

PARTS LIST
SERIES 6600 6.2-MHZ SUBCARRIER DEMODULATOR
PWB ASSEMBLY
229055 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 026	0082446	RESISTOR 12 OHM 1/4W 5% COMP	AB	RCR07G120JS
R 027	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 028	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 029	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 031	0080197	RESISTOR 14.7K OHM RN55C 1% MTL FLM	DP	RN55C1472F
R 032	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 033	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 034	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 035	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 036	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 037	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 038	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 039	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 040	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 041	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 042	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 043	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 044	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 045	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 046	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 047	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 048	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 049	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 050	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 051	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 052	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 053	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 054	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 055	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 056	0087779	POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M
U 001	0084009	IC AMPL IF/QUAD DET 14L-DIP	MOS	MC1357P
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP

PARTS LIST
SERIES 6600 7.4-MHZ SUBCARRIER DEMODULATOR PWB ASSEMBLY
229060

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229051		PROGRAM AUDIO PWB		
001	0229062		PROGRAM AUDIO SCHEMATIC DIAGRAM		
003	0229063		PROGRAM AUDIO TEST PROCEDURE		
004	0229054		PROGRAM AUDIO BLOCK DIAGRAM		
005	0228963		CLAMP AND AUDIO BOARD OUTLINE		
006	0087773		EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
007	0123468		SHIELD CAN SMALL	JLO	PER SA DWG 123468
008	0229061		LABEL 7,4 MHZ		
C 001	0075417		CAPACITR ,01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 002	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0073498		CAPACITR 820 PF 500V SILVER MICA 5%	CD	CD19FD821J03
C 004	0076486		CAPACITR 560 PF 500V SILVER MICA 5%	CD	CD19FD561J03
C 005	0078600		NOT ASSIGNED		
C 006	0082622		CAPACITR 4,5-20 PF MIN CER DISC PC MT	STZ	7S-TRIK0-02 4,5/20
C 007	0081828		CAPACITR 330 PF 100V SILVER MICA 2%	SGC	D151C331G03
C 008	0082622		CAPACITR 4,5-20 PF MIN CER DISC PC MT	STZ	7S-TRIK0-02 4,5/20
C 009	0073490		CAPACITR 5 PF 500V SILVER MICA +-,5PF	CD	CD15CD050D03
C 010	0070525		CAPACITR 150 PF 1KV CER DISC S3N 10%	CRL	DD-151
C 011	0073494		CAPACITR 22 PF 500V SILVER MICA 5%	CD	CD15ED220J03
C 012	0081332		CAPACITR 950 PF 100V SILVER MICA 5%	SGC	D151C951J03
C 013	0076170		CAPACITR 510 PF 500V SILVER MICA 5%	CD	CD19FD511J03
C 014	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 018	0070508		CAPACITR 62 PF 500V SILVER MICA 5%	CD	CD15ED620J03
C 019	0078817		CAPACITR 360 PF 500V SILVER MICA 1%	SGC	D155C361F03
C 020	0070518		CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0081536		CAPACITR 5-50 PF MIN PC MT	AE	MT10MA/550
C 022	0070470		CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 023	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0070498		CAPACITR 47 PF 500V SILVER MICA 5%	CD	CD15ED470J03
C 025	0081536		CAPACITR 5-50 PF MIN PC MT	AE	MT10MA/550
C 026	0070541		CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 027	0080039		CAPACITR 10 MF 20V SOLID TANT POL 10%	KEM	CS13BE106K
C 028	0080767		CAPACITR ,002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0082969		CAPACITR ,001 MF 500V SILVER MICA 1%	SGC	D195F102F03
C 030	0083708		CAPACITR ,027 MF 50V POLYSTYRENE 2%	ERC	ST128273G
C 031	0075417		CAPACITR ,01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 032	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080767		CAPACITR ,002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 035	0083708		CAPACITR ,027 MF 50V POLYSTYRENE 2%	ERC	ST128273G
C 036	0075417		CAPACITR ,01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 037	0070559		CAPACITR ,0051 MF 300V SILVER MICA 1%	CD	CD19FD512F03
C 038	0070671		CAPACITR 100 MF 25V	SP	500D107G025DD7
C 039	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 040	0070671		CAPACITR 100 MF 25V	SP	500D107G025DD7
C 041	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 042	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 043	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 044	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 045	0080139		CAPACITR ,1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081995		CAPACITR ,001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
CR001	0071110		DIODE 1N277 GER 100V 75MA	SY	1N277
CR002	0076448		DIODE 1N4742A SI ZEN 12V 5% 1W	MOS	1N4742
CR003	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154
L 001	0082456		INDUCTOR 23,5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082456		INDUCTOR 23,5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0082456		INDUCTOR 23,5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 004	0082594		INDUCTOR 5,6 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0082594		INDUCTOR 5,6 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0080599		INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599		INDUCTOR 4,7 UH SUBMIN UNSHLD 10%	DP	IR-2

PARTS LIST
SERIES 6600 7.4-MHZ SUBCARRIER DEMODULATOR PWB ASSEMBLY
229060 - continued

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
Q 001	0077147		TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0077147		TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148		TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0077147		TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 005	0077148		TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072068		RESISTOR 39K OHM 1/4W 10% COMP	AB	RCR07G393KS
R 002	0072059		RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 003	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 005	0071913		RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071941		RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 007	0071913		RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 008	0077524		RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 009	0071951		RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 010	0071941		RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 011	0071894		RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 012	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 013	0071977		RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 014	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 015	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 016	0072011		RESISTOR 5.6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 017	0079719		RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 018	0081997		RESISTOR 91 OHM 1/4W 5% COMP	AB	RCR07G910JS
R 019	0088028		RESISTOR 2.94K OHM RN55C 1% MTL FLM	DP	RN55C2941F
R 020	0088023		RESISTOR 475 OHM RN55C 1% MTL FLM	DP	RN55C4750F
R 021	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 022	0072039		RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 023	0078927		RESISTOR 1.65K OHM RN55C 1% MTL FLM	DP	RN55C1651F
R 024	0081735		RESISTOR 36 OHM 1/4W 5% COMP	AB	RCR07G360JS
R 025	0079010		RESISTOR 590 OHM RN55C 1% MTL FLM	DP	RN55C5900F
R 026	0082446		RESISTOR 12 OHM 1/4W 5% COMP	AB	RCR07G120JS
R 027	0071977		RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 028	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 029	0071926		RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071951		RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 031	0080197		RESISTOR 14.7K OHM RN55C 1% MTL FLM	DP	RN55C1472F
R 032	0071977		RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 033	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 034	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 035	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 036	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 037	0071901		RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 038	0071901		RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 039	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 040	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 041	0079719		RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 042	0071982		RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 043	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 044	0072002		RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 045	0079719		RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 046	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 047	0071862		RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 048	0071901		RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 049	0071901		RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 050	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 051	0082678		RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 052	0079123		RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 053	0079123		RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 054	0079123		RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 055	0079123		RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 056	0087779		POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M
U 001	0084009		IC AMPL IF/QUAD DET 14L-DIP	MOS	MC1357P
U 002	0087780		IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780		IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP

PARTS LIST
SERIES 6600 6.2-MHZ PROGRAM AUDIO PWB ASSEMBLY
229070

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229072	PROGRAM AUDIO DEMOD SCHEM DIAG 6.2MHZ		
002	0229051	PROGRAM AUDIO PWB		
003	0229073	TEST PROCEEDURE		
004	0229054	PROGRAM AUDIO BLOCK DIAGRAM		
005	0228963	CLAMP AND AUDIO BOARD OUTLINE		
006	0087773	EXTRACTOR 1/16 THK PC BD NYLON		
007	0123468	SHIELD CAN SMALL	BIV	CP-36
008	0229071	LABEL 6.2 MHZ PROGRAM AUDIO	JLO	PER SA DWG 123468
C 001	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0075196	CAPACITR .0018 MF 500V SILVER MICA 5%	CD	CD19FD182J03
C 004	0075193	CAPACITR .001 MF 500V SILVER MICA 5%	CD	CD19FD102J03
C 005	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 006	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STE	78-TRIK0-02 4.5/20
C 007	0076486	CAPACITR 560 PF 500V SILVER MICA 5%	CD	CD19FD561J03
C 008	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STE	78-TRIK0-02 4.5/20
C 009	0073493	CAPACITR 18 PF 500V SILVER MICA 5%	CD	CD15CD180J03
C 010	0070525	CAPACITR 150 PF 1KV CER DISC S3N 10%	CRL	DD-151
C 011	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	CD	CD15ED330J03
C 012	0075196	CAPACITR .0018 MF 500V SILVER MICA 5%	CD	CD19FD182J03
C 013	0073498	CAPACITR 820 PF 500V SILVER MICA 5%	CD	CD19FD821J03
C 014	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 018	0075199	CAPACITR 82 PF 500V SILVER MICA 5%	CD	CD15ED820J03
C 019	0070532	CAPACITR 300 PF 500V SILVER MICA 5%	CD	CD15FD301J03
C 020	0070518	CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0081536	CAPACITR 5-50 PF MIN PC MT	AE	MT10MA/550
C 022	0077512	CAPACITR 24 PF 500V SILVER MICA 5%	CD	CD15ED240J03
C 023	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0070509	CAPACITR 68 PF 500V SILVER MICA 5%	CD	CD15ED680J03
C 025	0081536	CAPACITR 5-50 PF MIN PC MT	AE	MT10MA/550
C 026	0070498	CAPACITR 47 PF 500V SILVER MICA 5%	CD	CD15ED470J03
C 027	0080039	CAPACITR 10 MF 20V SOLID TANT POL 10%	KEM	C813BE106K
C 028	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0082969	CAPACITR .001 MF 500V SILVER MICA 1%	SGC	D195F102F03
C 030	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 031	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 035	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 036	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 037	0070559	CAPACITR .0051 MF 300V SILVER MICA 1%	CD	CD19FD512F03
C 038	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 039	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 040	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 041	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 043	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 044	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 045	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081995	CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
CR001	0071110	DIODE 1N277 GER 100V 75MA	SY	1N277
CR002	0076448	DIODE 1N4742A SI ZEN 12V 5% 1W	MOS	1N4742
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
L 001	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 004	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072068	RESISTOR 39K OHM 1/4W 10% COMP	AB	RCR07G393KS
R 002	0072059	RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 003	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 005	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 007	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 008	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 009	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 010	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 011	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 012	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 013	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 014	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 015	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 016	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 017	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 018	0081997	RESISTOR 91 OHM 1/4W 5% COMP	AB	RCR07G910JS
R 019	0088028	RESISTOR 2.94K OHM RN55C 1% MTL FLM	DP	RN55C2941F
R 020	0088023	RESISTOR 475 OHM RN55C 1% MTL FLM	DP	RN55C4750F
R 021	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 022	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 023	0078927	RESISTOR 1.65K OHM RN55C 1% MTL FLM	DP	RN55C1651F
R 024	0081735	RESISTOR 36 OHM 1/4W 5% COMP	AB	RCR07G360JS
R 025	0079010	RESISTOR 590 OHM RN55C 1% MTL FLM	DP	RN55C5900F

PARTS LIST
SERIES 6600 6.2-MHZ PROGRAM AUDIO PWB ASSEMBLY
229070 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 026	0082446	RESISTOR 12 OHM 1/4W 5% COMP	AB	RCR07G120JS
R 027	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 028	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 029	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 031	0080197	RESISTOR 14.7K OHM RN55C 1% MTL FLM	DP	RN55C1472F
R 032	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 033	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 034	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 035	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 036	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 037	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 038	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 039	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 040	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 041	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 042	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 043	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 044	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 045	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 046	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 047	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 048	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 049	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 050	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 051	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 052	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 053	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 054	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 055	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
U 001	0084009	IC AMPL IF/QUAD DET 14L-DIP	MOS	MC1357P
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP

PARTS LIST
SERIES 6600 6.2-MHZ CUE DEMODULATOR PWB ASSEMBLY
230230

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229051	PROGRAM AUDIO PWB		
001	0229057	PROGRAM AUDIO SCHEMATIC DIAGRAM		
003	0229058	PROGRAM AUDIO TEST PROCEEDURE		
004	0229054	PROGRAM AUDIO BLOCK DIAGRAM		
005	0228963	CLAMP AND AUDIO BOARD OUTLINE		
006	0087773	EXTRACTOR 1/16 THK PC BD NYLON	BIV	CP-36
007	0123468	SHIELD CAN SMALL	JLO	PER SA DWG 123468
008	0230234	LABEL 6.2 MHZ CUE DEMODULATOR		
C 001	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 002	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 003	0075196	CAPACITR .0018 MF 500V SILVER MICA 5%	CD	CD19FD182J03
C 004	0081332	CAPACITR 950 PF 100V SILVER MICA 5%	SGC	D151C951J03
C 005	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	CD	CD15CD100J03
C 006	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STZ	7S-TRIK0-02 4.5/20
C 007	0078974	CAPACITR 620 PF 500V SILVER MICA 5%	CD	CD19FD621J03
C 008	0082622	CAPACITR 4.5-20 PF MIN CER DISC PC MT	STZ	7S-TRIK0-02 4.5/20
C 009	0073493	CAPACITR 18 PF 500V SILVER MICA 5%	CD	CD15CD180J03
C 010	0070525	CAPACITR 150 PF 1KV CER DISC S3N 10%	CRL	DD-151
C 011	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	CD	CD15ED330J03
C 012	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 013	0081330	CAPACITR 886 PF 100V SILVER MICA 5%	SGC	D151CXXXJ03 886 PF
C 014	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 015	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 016	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 017	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 018	0081743	CAPACITR 75 PF 500V SILVER MICA 5%	CD	CD15ED750J03
C 019	0080144	CAPACITR 430 PF 500V SILVER MICA 1%	SGC	D155C431F03
C 020	0070518	CAPACITR 100 PF 1KV CER DISC S3N 10%	CRL	DD-101
C 021	0081536	CAPACITR 8-50 PF MIN PC MT	AE	MT10MA/550
C 022	0073491	CAPACITR 12 PF 500V SILVER MICA 5%	CD	CD15CD120J03
C 023	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 024	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	CD	CD15ED620J03
C 025	0081536	CAPACITR 8-50 PF MIN PC MT	AE	MT10MA/550
C 026	0070541	CAPACITR 500 PF 1KV CER DISC Z5F 10%	CRL	DD 501
C 027	0080039	CAPACITR 10 MF 20V SOLID TANT POL 10%	KEM	C8138E106K
C 028	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 029	0082969	CAPACITR .001 MF 500V SILVER MICA 1%	SGC	D195F102F03
C 030	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 031	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 032	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 033	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 034	0080767	CAPACITR .002 MF 500V SILVER MICA 1%	SGC	D195C202F03
C 035	0083708	CAPACITR .027 MF 50V POLYSTYRENE 2%	ERC	ST12B273G
C 036	0075417	CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 037	0070559	CAPACITR .0051 MF 300V SILVER MICA 1%	CD	CD19FD512F03
C 038	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 039	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 040	0070671	CAPACITR 100 MF 25V	SP	500D107G025DD7
C 041	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 042	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
C 043	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 044	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 045	0080139	CAPACITR .1 MF 50V CER MONO -20%+80%	ER	8131-050-651-104Z
C 046	0081998	CAPACITR .001 MF 100V CER MONO X7R 10%	ER	8121-100-X7R-102K
CR001	0071110	DIODE 1N277 GER 100V 75MA	SY	1N277
CR002	0076448	DIODE 1N4742A SI ZEN 12V 5% 1W	MOS	1N4742
CR003	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR004	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR005	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
CR006	0071142	DIODE 1N4154 SIL 25V 150MA	SY	1N4154
L 001	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 002	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 003	0082456	INDUCTOR 23.5T #22 ST MP1 2 10-32X3/8 J	XZ	BY DESCRIPTION
L 004	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 005	0080000	INDUCTOR 6.8 UH SUBMIN UNSHLD 10%	DP	IR-2
L 006	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
L 007	0080599	INDUCTOR 4.7 UH SUBMIN UNSHLD 10%	DP	IR-2
Q 001	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 002	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 003	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
Q 004	0077147	TRANSSTR 2N3947 NPN SIL	MOS	2N3947
Q 005	0077148	TRANSSTR 2N3251 PNP SIL	MOS	2N3251
R 001	0072068	RESISTOR 39K OHM 1/4W 10% COMP	AB	RCR07G393KS
R 002	0072059	RESISTOR 27K OHM 1/4W 10% COMP	AB	RCR07G273KS
R 003	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 004	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 005	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 006	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 007	0071913	RESISTOR 270 OHM 1/4W 10% COMP	AB	RCR07G271KS
R 008	0077524	RESISTOR 75 OHM 1/4W 5% COMP	AB	RCR07G750JS
R 009	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 010	0071941	RESISTOR 820 OHM 1/4W 10% COMP	AB	RCR07G821KS
R 011	0071894	RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 012	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 013	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 014	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 015	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 016	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 017	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 018	0081997	RESISTOR 91 OHM 1/4W 5% COMP	AB	RCR07G910JS
R 019	0088026	RESISTOR 2.94K OHM RN55C 1% MTL FLM	DP	RN55C2941F
R 020	0088023	RESISTOR 475 OHM RN55C 1% MTL FLM	DP	RN55C4750F
R 021	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 022	0072039	RESISTOR 15K OHM 1/4W 10% COMP	AB	RCR07G153KS
R 023	0078927	RESISTOR 1.65K OHM RN55C 1% MTL FLM	DP	RN55C1651F
R 024	0081735	RESISTOR 36 OHM 1/4W 5% COMP	AB	RCR07G360JS
R 025	0079010	RESISTOR 590 OHM RN55C 1% MTL FLM	DP	RN55C5900F

PARTS LIST
SERIES 6600 6.2-MHZ CUE DEMODULATOR PWB ASSEMBLY
230230 - continued

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
R 026	0082446	RESISTOR 12 OHM 1/4W 5% COMP	AB	RCR07G120JS
R 027	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 028	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 029	0071926	RESISTOR 470 OHM 1/4W 10% COMP	AB	RCR07G471KS
R 030	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	AB	RCR07G102KS
R 031	0080197	RESISTOR 14.7K OHM RN55C 1% MTL FLM	DP	RN55C1472F
R 032	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	AB	RCR07G222KS
R 033	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 034	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 035	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 036	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 037	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 038	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 039	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 040	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 041	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 042	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	AB	RCR07G272KS
R 043	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 044	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	AB	RCR07G472KS
R 045	0079719	RESISTOR 5.23K OHM RN55C 1% MTL FLM	DP	RN55C5231F
R 046	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 047	0071862	RESISTOR 47 OHM 1/4W 10% COMP	AB	RCR07G470KS
R 048	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 049	0071901	RESISTOR 180 OHM 1/4W 10% COMP	AB	RCR07G181KS
R 050	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 051	0082678	RESISTOR 4.7 OHM 1/4W 5% COMP	AB	RCR07G4R7JS
R 052	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 053	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 054	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 055	0079123	RESISTOR 301 OHM RN55C 1% MTL FLM	DP	RN55C3010F
R 056	0087779	POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M
U 001	0084009	IC AMPL IF/QUAD DET 14L-DIP	MOS	MC1357P
U 002	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP
U 003	0087780	IC OP AMP JFET 8L-DIP 70C COMP	TI	TL072CP

PARTS LIST
-24-VOLT DC POWER SUPPLY MODULE ASSEMBLY
229840

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
	0229845		-24 VOLT DC POWER SUPPLY SCHEMATIC DIAG		
	0229846		-24 VOLT DC POWER SUPPLY TEST PROCEDURE		
	0229847		-24 VOLT DC POWER SUPPLY BLOCK DIAGRAM		
001	0229850		CHASSIS -24 VOLT DC POWER SUPPLY		
002	0229851		SPACER -24 VOLT DC POWER SUPPLY		
003	0229843		ASSY PWB INTERCONNECT BRD -24 VOLT DC PS		
004	0229853		BACK PANEL SILKSCREEN -24 VOLT DC PS		
005	0021029		BUTTON,NYLON,CHASSIS SLIDE,ACESSORY	SA	PER DWG 21029
006	0229841		ASSY PWB SWITCHING BRD -24 VOLT DC PS		
007	0088082		SCREW 4-40 X 5/16 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION CD PLT
008	0087764		RING LOCKING TOGGLE SWITCH 15/32 IN,	CH	29-761
009	0132439		LABEL HIGH VOLTAGE 1/2-IN, X 1-IN,	XZ	PER SA DWG 132439
010	0073374		WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D
011	0073374		WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D
012	0078102		BUSHING RUBBER FOR CABLE CLAMP #4	XZ	MS3420-4
013	0070774		CLAMP CABLE CONN 10SL,12S&12 5/16 OD CBL	XZ	MS3057-4A
014	0070942		CONNECTR 3106A 12S 3S	ABE	MS3106A-12S-3S
015	0080558		BAG, PLASTIC 3 X 4 MINI GRIP, ZIP LIP	KCL	BY DESCRIPTION
016	0084677		GUIDE PC BOARD 3,6 LONG ,10 THK	AMP	583671-1
017	0077506		SCREW 2-56 X 1/4 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION
F 001	0071227		FUSE 3 AMP	L	3AG 312003,
P 001	0070869		CONNECTR 3102A 12S 3P	ABE	MS3102A-12S-3P
S 001	0072904		SWITCH TOG DPST AC 3A 250V	CH	7590K6
TP001	0082526		JACK TEST RED	J	105-1042-001
TP002	0082525		JACK TEST BLACK	J	105-1043-001
TP003	0087763		JACK TEST VIOLET	J	105-1052-001
XF001	0071249		FUS HLDR PNL MT FOR 3AG OR 3AB	BUS	HKP

PARTS LIST
SERIES 6600 -24-VOLT DC POWER SUPPLY
SWITCHING BOARD ASSEMBLY
229841

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229842		PWB SWITCHING BOARD -24VDC POWER SUPPLY		
002	0088093		HEAT SINK FOR TO-3 CASE 1-INCH HIGH	WAK	689,100P2
003	0073374		WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D
004	0073374		WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D
005	0072363		SCREW 6-32 X 3/8 PAN HD,SST	XZ	PER MS51957-28
006	0075940		WASHER NO. 6 LOCK, INT TOOTH, CAD PL STL	XZ	ANSI B18.21.1
007	0071498		NUT 6-32 UNC-2B,SM PATT 1/4 HEX,SST	XZ	BY DESCRIPTION
008	0079335		PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP
009	0082640		HEAT SINK COMPOUND, SILICONE	DOW	340
C 001	0035654		CAPACITR 10 MF 25V SOLID TANT POL 10%	KEM	T362B106K025AS
C 002	0075417		CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
C 003	0075417		CAPACITR .01 MF 150V CER DISC Z5V-40+60%	CRL	DDM-103
CR001	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914
CR002	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914
Q 001	0078851		TRANSSTR 2N2905 PNP SIL	MOS	2N2905
Q 002	0078851		TRANSSTR 2N2905 PNP SIL	MOS	2N2905
Q 003	0086507		TRANSSTR PMD10K80 NPN POWER DARLINGTON	LE	PMD10K80
Q 004	0086507		TRANSSTR PMD10K80 NPN POWER DARLINGTON	LE	PMD10K80
R 001	0072064		RESISTOR 33K OHM 1/4W 10% COMP	AB	RCR07G333KS
R 002	0072034		RESISTOR 12K OHM 1/4W 10% COMP	AB	RCR07G123KS
R 003	0072011		RESISTOR 5,6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 004	0082648		POT 5K OHM 1/2W CER .30 DIA VERT ADJ 4T	BLI	3339P-1-502
R 005	0072011		RESISTOR 5,6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 006	0071931		RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 007	0072011		RESISTOR 5,6K OHM 1/4W 10% COMP	AB	RCR07G562KS
R 008	0071931		RESISTOR 560 OHM 1/4W 10% COMP	AB	RCR07G561KS
R 009	0071932		RESISTOR 560 OHM 1/2W 10% COMP	AB	RCR20G561KS
R 010	0071894		RESISTOR 120 OHM 1/4W 10% COMP	AB	RCR07G121KS
R 011	0081674		POT 1K OHM 1/4W COMP 1/2 DIA VERT ADJ	AB	YR102M
R 012	0071932		RESISTOR 560 OHM 1/2W 10% COMP	AB	RCR20G561KS
R 013	0071868		RESISTOR 50 OHM 5W WW 5%	TO	VAL5
R 014	0071868		RESISTOR 50 OHM 5W WW 5%	TO	VAL5
T 001	0229848		TRANSFORMER POWER ASSEMBLY		
U 001	0086509		IC VLTG RGLTR SWITCHING 70C 16L-DIP	MOS	MC3420P

PARTS LIST
SERIES 6600 24-VOLT DC POWER SUPPLY
INTERCONNECT BOARD ASSEMBLY
229843

REF DESIG	PART NO.	FN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
	0229843WPC		WIRE PREP FOR INTERCONNECT 24 V DC PS			1
001	0229844	F	PWB INTERCONNECT BOARD =24VDC PWR SUPPLY			1
004	0170690		CONNECTR 15 PIN SINGLE READOUT FXD PINS	DP	EBT=156=15=D1X	2
C 001	0087781		CAPACITR 100 MF 50V	SP	672D107H050DT5J	1
C 002	0087781		CAPACITR 100 MF 50V	SP	672D107H050DT5J	1
C 003	0080139		CAPACITR ,1 MF 50V CER MONO =20%+80%	ER	8131=050=651=104Z	1
C 004	0080139		CAPACITR ,1 MF 50V CER MONO =20%+80%	ER	8131=050=651=104Z	1
C 005	0035656		CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS	1
C 006	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131=050=651=105M	1
C 007	0080139		CAPACITR ,1 MF 50V CER MONO =20%+80%	ER	8131=050=651=104Z	1
C 008	0070552		CAPACITR ,002 MF 1KV CER DISC Z5U 20%	CRL	DD202	1
C 009	0229857		CAPACITOR;ELECTROLYTIC,LOW ESR			1
C 010	0081095		CAPACITR 3,3 MF 50V CER MONO 20%	ER	8151=050=651=335M	1
C 011	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131=050=651=105M	1
C 012	0035656		CAPACITR 100 MF 20V SOLID TANT POL 10%	KEM	T362D107K020AS	1
C 013	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131=050=651=105M	1
C 014	0080139		CAPACITR ,1 MF 50V CER MONO =20%+80%	ER	8131=050=651=104Z	1
C 015	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131=050=651=105M	1
C 016	0229857		CAPACITOR;ELECTROLYTIC,LOW ESR			1
C 017	0081095		CAPACITR 3,3 MF 50V CER MONO 20%	ER	8151=050=651=335M	1
C 018	0081101		CAPACITR 1 MF 50V CER MONO 20%	ER	8131=050=651=105M	1
CR001	0082208		DIODE MR504 SIL 400V 3A	MOS	MR504	1
CR002	0086163		VARISTOR 37,1=41,0V 1 MA 5W	GS	1,5KE39A	1
CR003	0087545		DIODE 1N5364B ST ZEN 33V 5% 5W	MOS	1N5364B	1
CR004	0087761		DIODE 1N5355A ST ZEN 18V 5% 5W	MOS	1N5355A	1
CR005	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR006	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR007	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR008	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR009	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR010	0071122		DIODE 1N914 SIL 75V 75MA	SY	1N914	1
CR011	0085154		DIODE MR854 SIL 400V 3A FAST REC,	MOS	MR854	1
CR012	0085154		DIODE MR854 SIL 400V 3A FAST REC,	MOS	MR854	1
CR013	0082208		DIODE MR504 SIL 400V 3A	MOS	MR504	1
CR014	0085154		DIODE MR854 SIL 400V 3A FAST REC,	MOS	MR854	1
CR015	0085154		DIODE MR854 SIL 400V 3A FAST REC,	MOS	MR854	1
CR016	0082208		DIODE MR504 SIL 400V 3A	MOS	MR504	1
L 001	0229849		CHOKE ASSEMBLY			1
L 002	0229854		INDUCTOR =24VOLT DC POWER SUPPLY			1
L 003	0229849		CHOKE ASSEMBLY			1
L 004	0229854		INDUCTOR =24VOLT DC POWER SUPPLY			1
Q 001	0077147		TRANSSTR 2N3947 NPN SIL	MOS	2N3947	1
Q 002	0087762		THYRISTOR TRIAC 2 MODE 200V 8A RMS	MOS	2N6342	1
Q 003	0087762		THYRISTOR TRIAC 2 MODE 200V 8A RMS	MOS	2N6342	1
R 001	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3	1
R 002	0089036		RESISTOR 33 OHM 1/4W 5% CARBON FILM			1

PARTS LIST
SERIES 6600 24-VOLT DC POWER SUPPLY
INTERCONNECT BOARD ASSEMBLY
229843 - continued

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY
R 003	0071889		RESISTOR 100 OHM 1/2W 10% COMP	AB	RCR20G101KS	1
R 004	0089048		RESISTOR 100 OHM 1/4W 5% CARBON FILM			1
R 005	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3	1
R 006	0083934		RESISTOR 42.2K OHM RN55C 1% MTL FLM	DP	RN55C4222F	1
R 007	0080196		RESISTOR 14.0K OHM RN55C 1% MTL FLM	DP	RN55C1402F	1
R 008	0083906		RESISTOR 3.83K OHM RN55C 1% MTL FLM	DP	RN55C3831F	1
R 009	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1
R 010	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 011	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 012	0078933		RESISTOR 10.0K OHM RN55C 1% MTL FLM	DP	RN55C1002F	1
R 013	0084612		RESISTOR 4.75K OHM RN55C 1% MTL FLM	DP	RN55C4751F	1
R 014	0084612		RESISTOR 4.75K OHM RN55C 1% MTL FLM	DP	RN55C4751F	1
R 015	0083891		RESISTOR 1.50K OHM RN55C 1% MTL FLM	DP	RN55C1501F	1
R 016	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 017	0083894		RESISTOR 1.78K OHM RN55C 1% MTL FLM	DP	RN55C1781F	1
R 018	0078928		RESISTOR 100K OHM RN55C 1% MTL FLM	DP	RN55C1003F	1
R 019	0089104		RESISTOR 22K OHM 1/4W 5% CARBON FILM			1
R 020	0089104		RESISTOR 22K OHM 1/4W 5% CARBON FILM			1
R 021	0089086		RESISTOR 3.9K OHM 1/4W 5% CARBON FILM			1
R 022	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 023	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1
R 024	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 025	0089100		RESISTOR 15K OHM 1/4W 5% CARBON FILM			1
R 026	0089110		RESISTOR 39K OHM 1/4W 5% CARBON FILM			1
R 027	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 028	0035754		RESISTOR .20 OHM 2W WW 10%	CBR	CW2	1
R 029	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3	1
R 030	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM			1
R 031	0071822		RESISTOR 3 OHM 3W WW 5%	TO	VAL3	1
R 032	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1
R 033	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1
R 034	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 035	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1
R 036	0083906		RESISTOR 3.83K OHM RN55C 1% MTL FLM	DP	RN55C3831F	1
R 037	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 038	0078933		RESISTOR 10.0K OHM RN55C 1% MTL FLM	DP	RN55C1002F	1
R 039	0084612		RESISTOR 4.75K OHM RN55C 1% MTL FLM	DP	RN55C4751F	1
R 040	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 041	0083891		RESISTOR 1.50K OHM RN55C 1% MTL FLM	DP	RN55C1501F	1
R 042	0084612		RESISTOR 4.75K OHM RN55C 1% MTL FLM	DP	RN55C4751F	1
R 043	0083894		RESISTOR 1.78K OHM RN55C 1% MTL FLM	DP	RN55C1781F	1
R 044	0078928		RESISTOR 100K OHM RN55C 1% MTL FLM	DP	RN55C1003F	1
R 045	0089104		RESISTOR 22K OHM 1/4W 5% CARBON FILM			1
R 046	0089104		RESISTOR 22K OHM 1/4W 5% CARBON FILM			1
R 047	0076956		POT 1K OHM 3/4W CER RECT 3/4 LONG 15T	BLI	3009P-1-102	1
R 048	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1
R 049	0089086		RESISTOR 3.9K OHM 1/4W 5% CARBON FILM			1
R 050	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1
R 051	0089112		RESISTOR 47K OHM 1/4W 5% CARBON FILM			1
R 052	0089110		RESISTOR 39K OHM 1/4W 5% CARBON FILM			1
R 053	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1
R 054	0035754		RESISTOR .20 OHM 2W WW 10%	CBR	CW2	1
U 001	0084890		IC OP AMP 8L-DIP 70C COMP 741C	MOS	MC1741CP1	1
U 002	0081840		IC OP AMP 8L-DIP 70C COMP DUAL 741C	NSC	LM1458N	1
U 003	0081840		IC OP AMP 8L-DIP 70C COMP DUAL 741C	NSC	LM1458N	1
U 004	0084890		IC OP AMP 8L-DIP 70C COMP 741C	MOS	MC1741CP1	1
U 005	0083237		IC VLTG RGLTR NEG 15V 0.5A TYP T0220	MOS	MC7915CT	1

PARTS LIST
SERIES 6600 ACCESSORY KIT
229014

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0228964	CABLE POWER JUMPER		
002	0228966	ASSY COAX CONNECTOR		
003	0080559	BAG, PLASTIC 5 X 8 MINI GRIP, ZIP LIP	KCL	BY DESCRIPTION
004	0088139	CONN COAX ADAPTER BNC MALE TO FEMALE F	GIL	G-BNCF-MF
005	0082767	CONN RECT 80C HOUSING FREE HANG 6 CIR	AMP	1-480270-0
006	0082914	SOCKET BRASS TIN PLATED .010 STOCK STRIP	AMP	61115-1

PARTS LIST
SERIES 6600 LNA POWER INSERTER KIT
230074

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0198810	BIAS TEE- 3.7 TO 4.2 GHZ, MODEL 340-1		
002	0082227	TUBING VINYL AWG 2 .263 ID .303 OD -50C	MMM	3002 BLACK
003	0082914	SOCKET BRASS TIN PLATED .010 STOCK STRIP	AMP	61115-1
004	0082767	CONN RECT 80C HOUSING FREE HANG 6 CIR	AMP	1-480270-0
005	0073394	WIRE 22 STRANDED WHITE	THM	PER MIL-W-16878D
006	0073394	WIRE 22 STRANDED WHITE	THM	PER MIL-W-16878D

PARTS LIST
MODELS 6602/6603 AUTO POLARIZATION
ACCESSORY KIT
230072

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0229375	POLARIZATION RELAY		
002	0230073	AUTO POLARIZATION CABLE		
003	0087046	CONN RECT SOC HOUSING FREE HANG 10 CIR	AMP	1-480285-0
004	0082914	SOCKET BRASS TIN PLATED ,010 STOCK STRIP	AMP	61115-1
005	0073374	WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D
006	0073374	WIRE 20 STRANDED WHITE	THM	PER MIL-W-16878D

PARTS LIST
MODELS 6602/6603 FREQUENCY AGILE CONVERTER
ACCESSORY CONNECTION KIT
229508

REF DESIG	PART NO.	DESCRIPTION	VENDOR	VENDOR PART NUMBER
001	0080558	BAG, PLASTIC 3 X 4 MINI GRIP, ZIP LIP	KCL	BY DESCRIPTION
002	0082914	SOCKET BRASS TIN PLATED ,010 STOCK STRIP	AMP	61115-1
003	0087046	CONN RECT SOC HOUSING FREE HANG 10 CIR	AMP	1-480285-0
004	0086884	JUMPER FEMALE ,10 INCH CENTERS	BGE	65474-004

MANUFACTURERS' CODES

Vendor Code	Manufacturer
A	Aerovox Corporation New Bedford, MA
AB	Allen-Bradley Milwaukee, WI
ABE	Amphenol Corporation Broadview, IL
AE	Amperex Electronics Hicksville, L.I., NY
AHM	Aham-East Woburn, MA
AMP	AMP, Inc. Harrisburg, PA
BEU	Laconia Products Laconia, NH
BGE	Berg Electronics New Cumberland, PA
BIV	Bivar Company Palo Alto, CA
BLI	Bourns Laboratories, Inc. Riverside, CA
BUS	Bussman Manufacturing St. Louis, MO
CD	Cornell-Dubilier So. Plainfield, NJ
CBR	Colber Corporation/Union Carbide Irvington, NJ
CCT	Coilcraft Cary, IL
CDB	Corn Brothers Smyrna, GA
CH	Cutler-Hammer, Inc. Milwaukee, WI
CM	Cinch Manufacturing Company Chicago, IL
CRL	Centralab Milwaukee, WI
CS	Continental Screw Company New Bedford, MA

Vendor Code	Manufacturer
DI	Dialight Corporation Brooklyn, NY
DOW	Dow Corning Corporation Midland, MI
DP	Dale Products Columbus, NE
ER	Erie Resistor Corporation Erie, PA
ERC	Electronics Concept Eatontown, NJ
ERT	Erie Technological Products, Inc. Tech. Materials Division State College, PA
FSC	Fairchild Semiconductor Corp. San Rafael, CA
GC	General Cement Mfg. Company Rockford, IL
GE	General Electric Schenectady, NY
GIL	Gilbert Engineering Co. Phoenix, AZ
H	Holub Industries, Inc. Sycamore, IL
ITT	ITT Wire and Cable Atlanta, GA
J	E. F. Johnson Company Waseca, MN
JLO	JLO Metal Products Chicago, IL
KCL	KCL Corporation Decatur, GA
KEE	Keystone Electronics Corporation New York, NY
KSW	KSW Electronics, Inc. Burlington, MA
L	Littlefuse, Inc. Des Plaines, IL

Vendor Code	Manufacturer
LOC	Loctite Corporation Newington, CT
MJ	Millen James Mfg. Co., Inc. Malden, MA
MMM	Minnesota Mining & Mfg. Company St. Paul, MN
MOS	Motorola Semiconductor Products Phoenix, AZ
NAM	North American Micro Limited Stoney Creek, Ontario
NSC	National Semiconductor Corp. Danbury, CT
PAN	Panduit Corporation Tinley Park, IL
PSS	Plessey Semiconductor Products Santa Ana, CA
PSY	Plessey Capacitors Westlake Village, CA
RAD	Radio Materials Company Chicago, IL
RBN	Robinson Nugent New Albany, IN
RCA	Radio Corporation of America Harrison, NJ
RE	Royal Electric Corporation Pawtucket, RI
SA	Scientific-Atlanta, Inc. Atlanta, GA
SGC	Sangamo Electric Co. Springfield, IL
SH	Herman H. Smith Brooklyn, NY
SML	Paul Smith, Inc. Cincinnati, OH
SP	Sprague Products Company Huntsville, AL
SPU	Spectrum Control, Inc. Fairview, PA
STK	Stackpole Carbon Co., Magnet Div. St. Marys, PA
STZ	Stettner-Trush, Inc. Cazenovia, NY
THC	Thermalloy Company Dallas, TX
THM	Thermetics, Inc. Elm City, NC
TI	Texas Instruments Dallas, TX
TO	Memcor, Inc., Components, Div. Tru-Ohm Huntington, IN
UNB	Standard Pressed Steel Precision Fasteners Division Jenkintown, PA
VAO	Varo, Inc. Garland, TX
WA	Wakefield Engineering Company Wakefield, MA
XZ	Any manufacturer that produces this part to appropriate military, Federal, or commercial specifications
ZIE	Zierick Manufacturing Corporation Mt. Kisco, NY

SECTION 7
DIAGRAMS

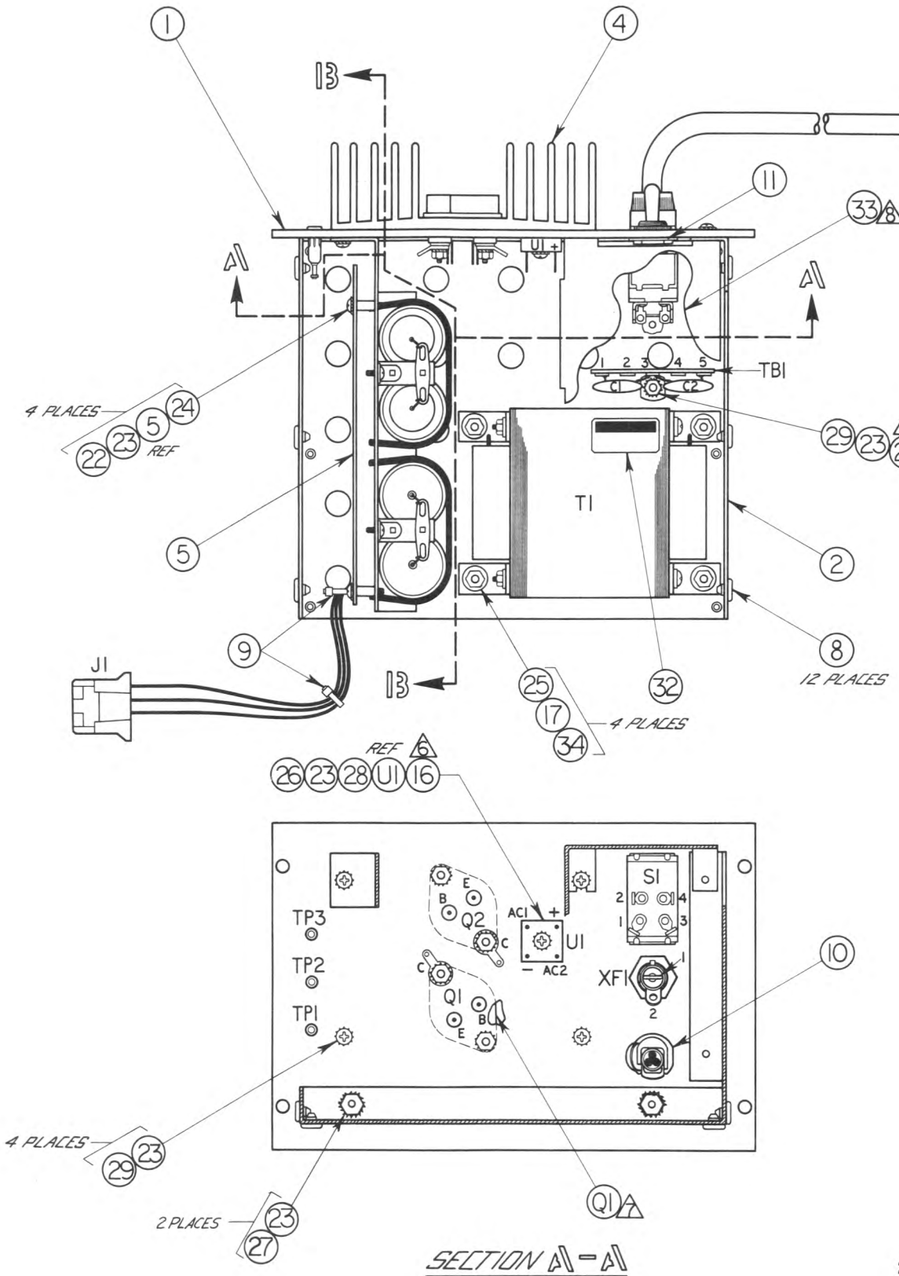
This section contains schematic diagrams and assembly drawings for the Series 6600 Video Receiver. The sequence of the drawings in this section is, in general, according to the ascending order of the receiver subassembly reference designations (shown in the configuration chart of figure 1-3). Refer to table 7-1 for a numerical cross-reference of drawing number to figure and page numbers.

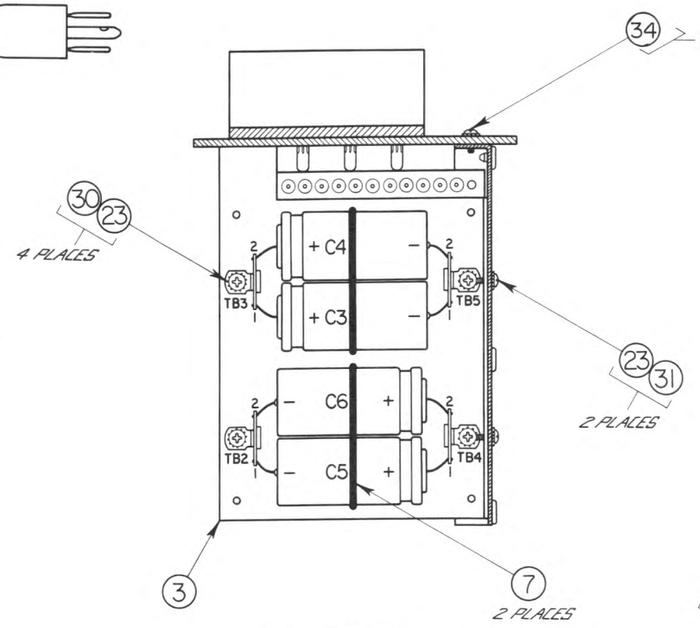
TABLE 7-1. DRAWING NUMBER NUMERICAL INDEX

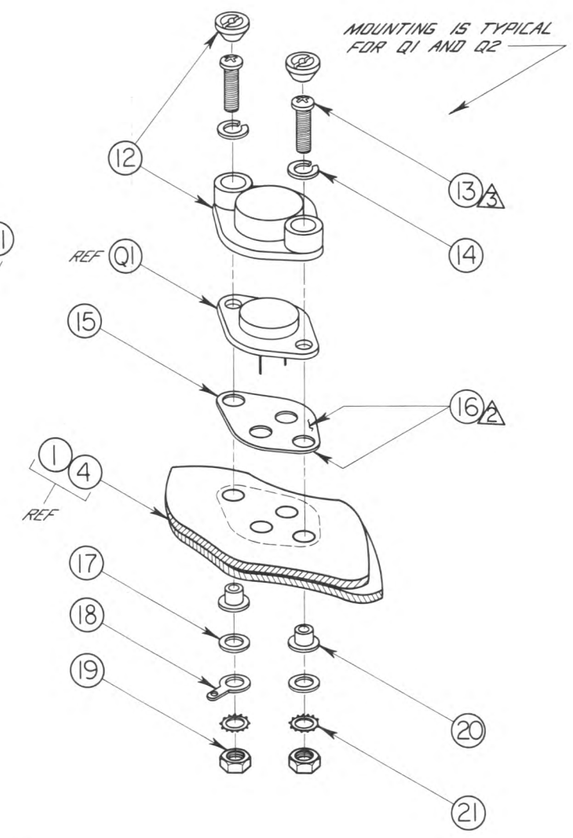
Drawing Number	Figure Number	Page Number
153189A	7-31	7-35
228980B	7-4	7-6
228985A	7-5	7-7
228987E	7-7	7-9
228988E	7-6	7-8
228990A	7-8	7-11
228992C	7-10	7-13
228993E	7-9	7-12
229000D	7-1	7-3
229001B	7-3	7-5
229003B	7-2	7-4
229020B	7-18	7-21
229022A	7-17	7-20
229025A	7-20	7-23
229027	7-19	7-22
229030	7-22	7-25
229032B	7-21	7-24
29035D	7-24	7-27
229037A	7-23	7-26
229040A	7-26	7-29
229042C	7-25	7-28
229043	7-43	7-49
229045A	7-30	7-33
229047B	7-29	7-32
229050D	7-28	7-31
229052E	7-27	7-30
229055B	7-33	7-37
229057B	7-32	7-36
229060C	7-35	7-39
229062B	7-34	7-38
229070A	7-37	7-41

TABLE 7-1. DRAWING NUMBER NUMERICAL INDEX - continued

Drawing Number	Figure Number	Page Number
229072A	7-36	7-40
229077D	7-14	7-17
229840	7-40	7-45
229841	7-42	7-47
229845C	7-41	7-46
230230	7-39	7-43
230232	7-38	7-42
230260C	7-11	7-14
230265B	7-12	7-15
230268C	7-13	7-16
230270D	7-16	7-19
230272A	7-15	7-18
231624C	7-45	7-51
231623A	7-44	7-50







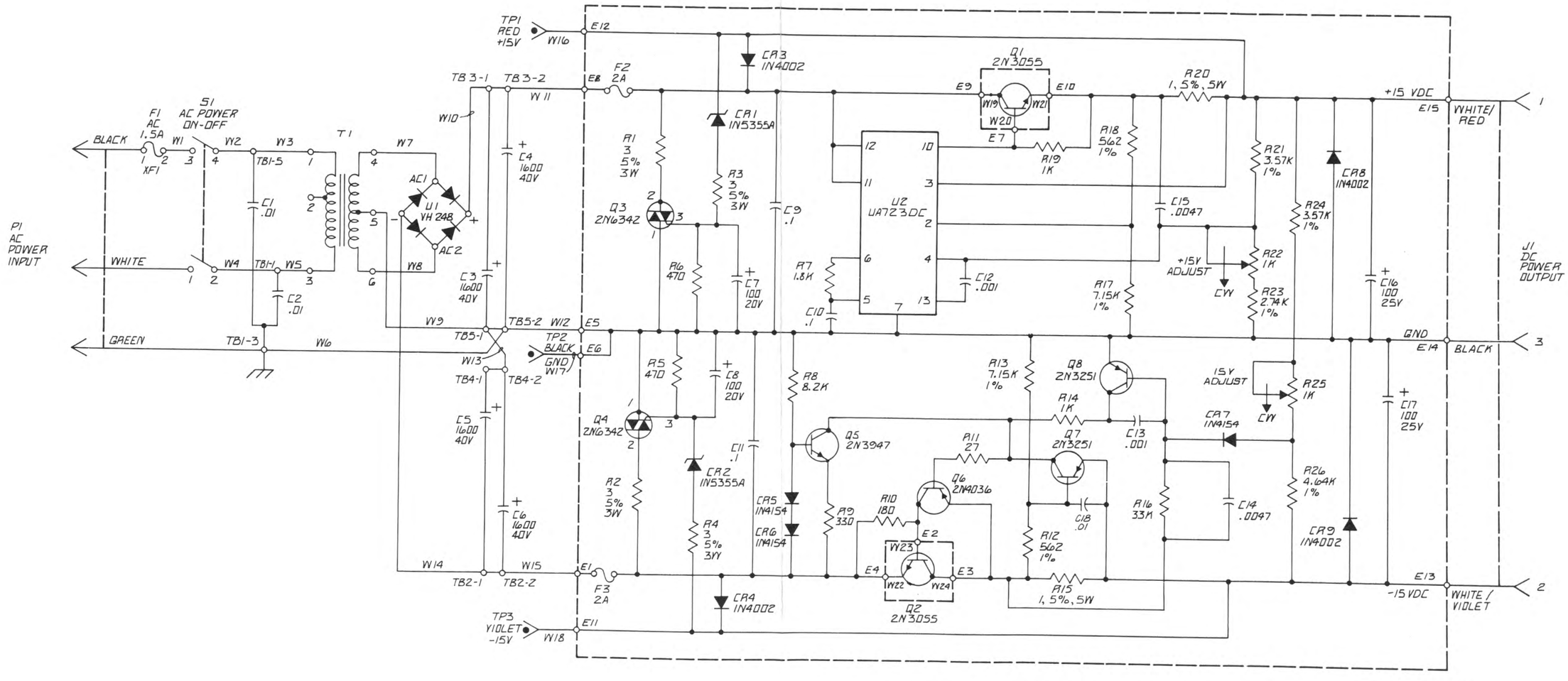
NOTES:

1. SEE WIRE SET ITEM (6) FOR WIRING INSTRUCTIONS.
2. BRUSH ON THIN LAYER OF HEAT SINK COMPOUND ITEM (16) ON BOTH SIDES OF INSULATOR ITEM (15).
3. TIGHTEN BOTH MOUNTING SCREWS WITH A TORQUE OF 6 TO 8 INCH-LB.
5. INSTALL TWO ITEM (27).
6. BRUSH ON THIN LAYER OF HEAT SINK COMPOUND ITEM (16) ON BOTTOM OF U1.
7. Q1 AND Q2 TO BE INSTALLED AS SHOWN IN EXPLODED VIEW.
8. INSTALL ITEM (33) AFTER FINAL CHECKOUT.

SEE SEPARATE PARTS LIST

229000D

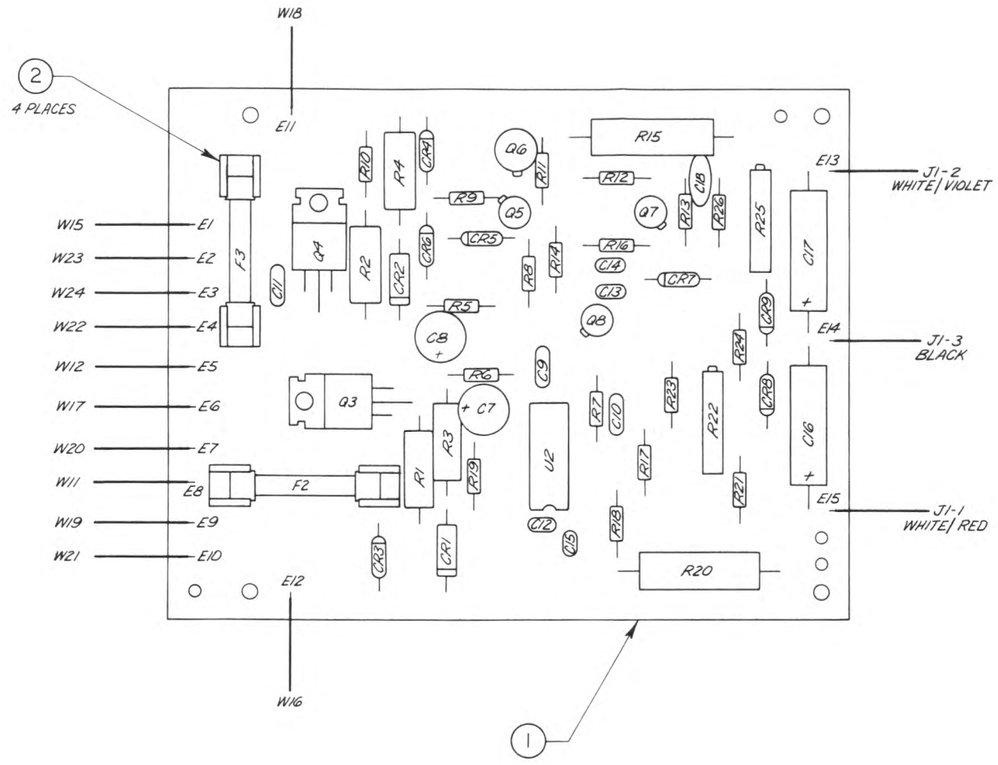
Figure 7-1. Series 6600 AC Power Supply Module Assembly



229003B

Figure 7-2. Series 6600 AC Power Supply Schematic Diagram

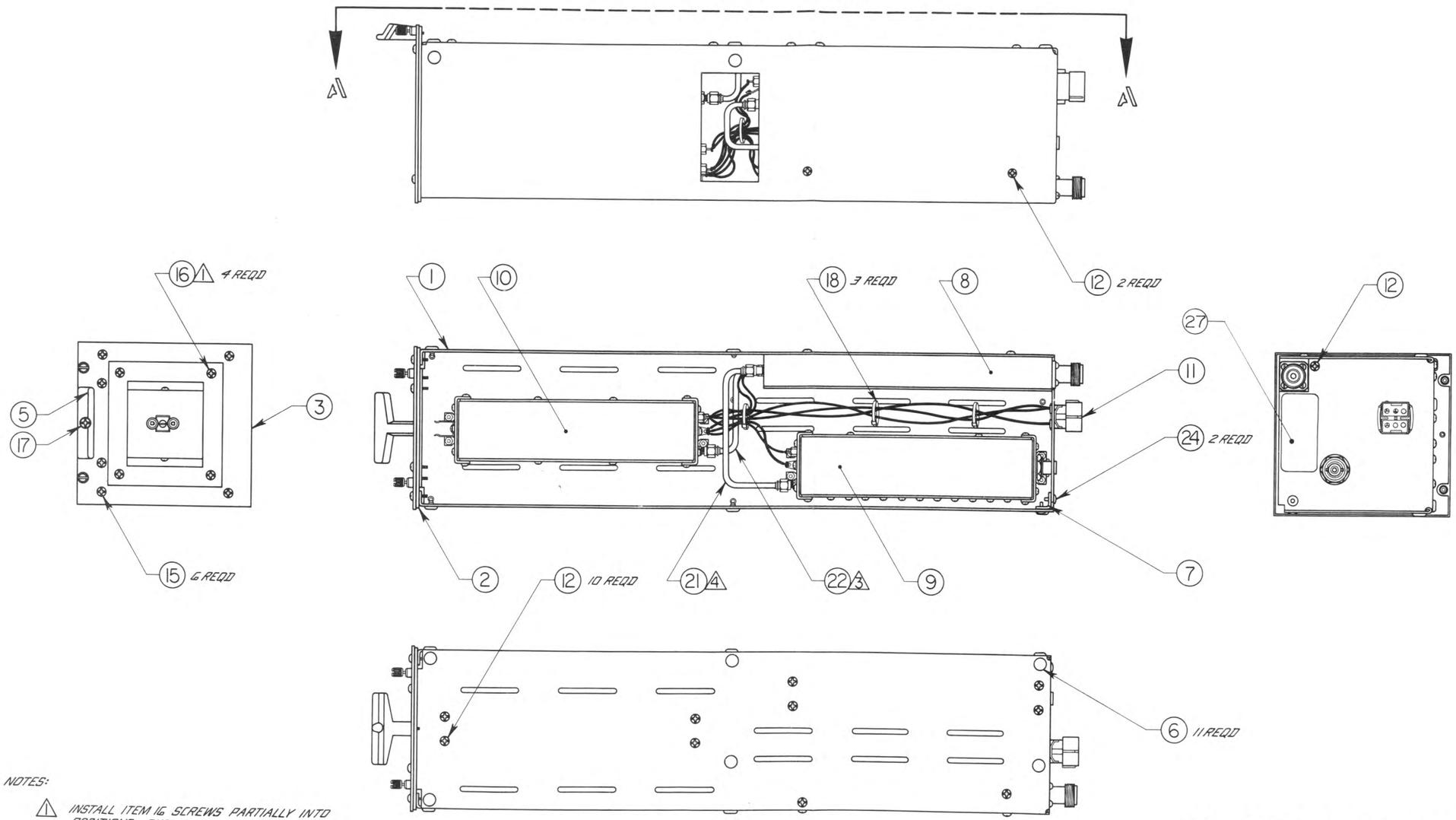
25R247C



SEE SEPARATE PARTS LIST

229001B

Figure 7-3. Series 6600 AC Power Supply Printed-Wiring Board Assembly



VIEW A-A

SEE SEPARATE PARTS LISTS 228980 & 230368

NOTES:

1. INSTALL ITEM 16 SCREWS PARTIALLY INTO POSITIONS SHOWN.
2. INTERCONNECT ITEMS 8, 9, 10 AND 11 USING ITEMS 13, 14 AND 25 PER WIRING TABLE SHOWN.
3. INTERCONNECT ITEM 8 LO INPUT WITH ITEM 10 LO OUT USING ITEM 22.
4. INTERCONNECT ITEM 8 IF OUTPUT WITH ITEM 9 IF IN USING ITEM 21.
5. ITEM NO. 2G REPRESENTS THE CHASSIS ASSEMBLY AND IS COMPRISED OF THE PARTS LISTED IN PARTS LIST 230368.

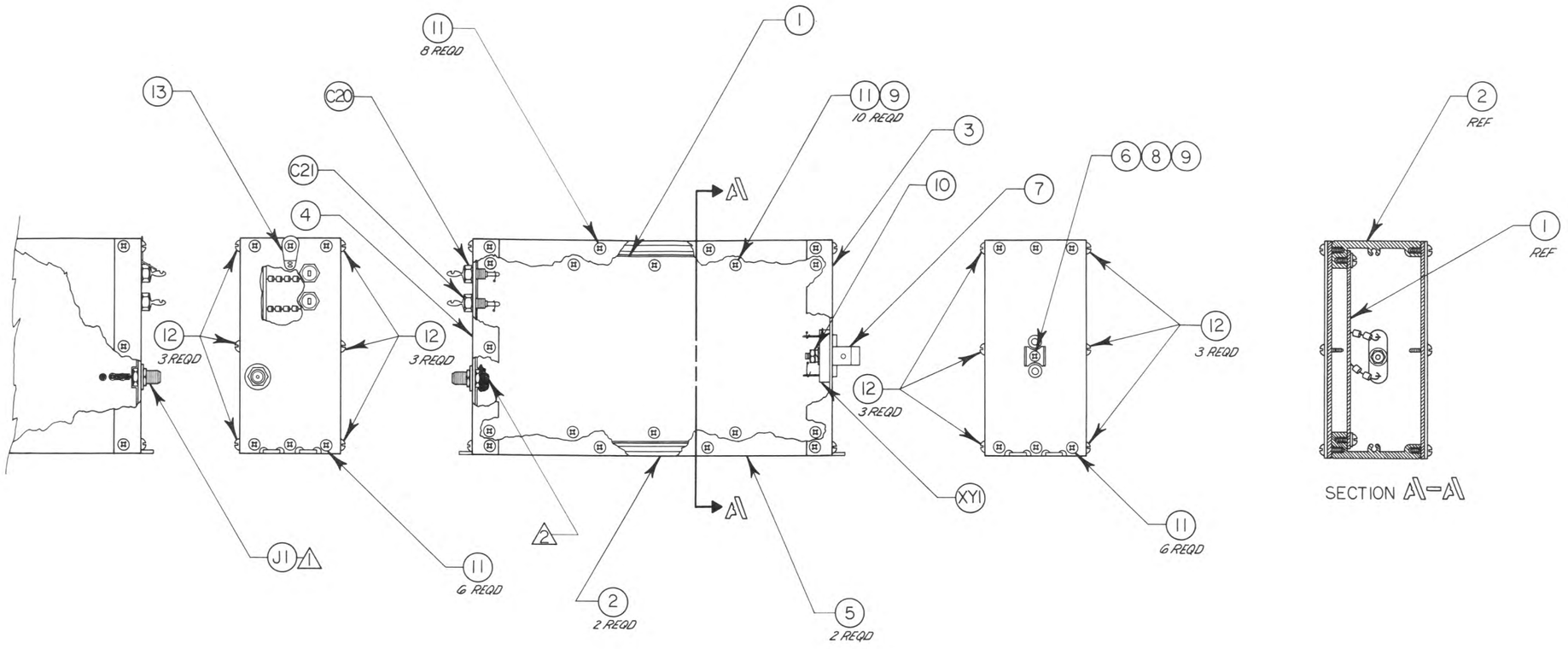
228980B

WIRING TABLE

WIRE NO.	MATERIAL ITEM NO.	COLOR	LENGTH IN INCHES	ORIGIN	DESTINATION	REMARKS
1	11	WHT/RED	11.5 REF	REAR CONN PIN 2	ITEM 10 +15V	WIRES ARE SUPPLIED WITH ITEM 11 ASSY
2	11	WHT/VIO	11.5 REF	REAR CONN PIN 1	ITEM 10 -15V	
3	11	BLK	11.5 REF	REAR CONN PIN 3	ITEM 10 GND LUG	
4	13	WHT/RED	4.5	ITEM 10 +15V	ITEM 8 +15V	SEE ROUTING IN DRAWING
5	25	BLK	5.0	ITEM 10 GND LUG	ITEM 8 GND LUG	
6	14	WHT/VIO	6.0	ITEM 10 -15V	ITEM 9 -15V	
7	25	BLK	5.0	ITEM 10 GND LUG	ITEM 9 GND LUG	

Figure 7-4. Model 6601 Integrated Converter Downconverter Module Assembly

25R247C



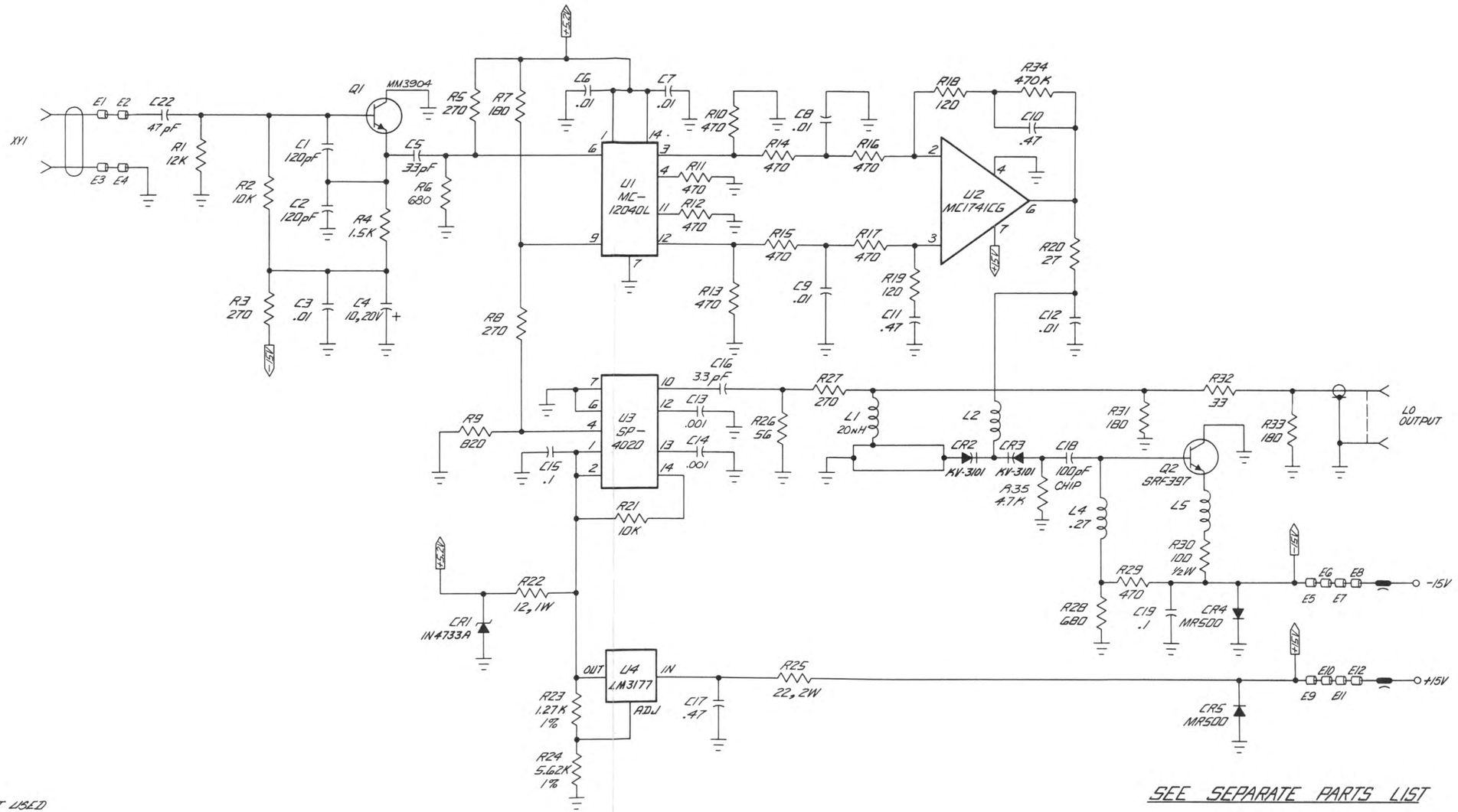
NOTES:

1. ASSEMBLY INSTRUCTIONS
   A. MOUNT ITEM 2, SIDE PANELS, ONTO ITEM 4, REAR PANEL. LEAVE EQUAL CLEARANCE ON EACH END OF SIDE PANEL TO FACILITATE REMOVABLE COVER INSTALLATION.
   B. INSERT J1 CONNECTOR INTO ITEM 4, REAR PANEL. DO NOT SECURE WITH HARDWARE UNTIL AFTER SOLDERING TO BOARD.
   C. SLIDE ITEM 1, BOARD, INTO HOUSING AND SOLDER CONNECTOR TAB TO BOARD BOTTOM AND CONNECTOR LUG TO BOARD TOP AS SHOWN.
   D. INSTALL CONNECTOR MOUNTING HARDWARE THEN SECURE ITEM 1, BOARD, TO ITEM 2, SIDE PANELS, USING ITEMS 9 AND 11.
   E. INSTALL REMAINING BOX PARTS AS SHOWN.
2. AT LEAST 80% OF GAP BETWEEN PRINTED WIRING BOARD AND CONNECTOR MUST BE BRIDGED WITH GOOD SOLDER FLOW.

228985A

SEE SEPARATE PARTS LIST

Figure 7-5. Model 6601 First LO Module Assembly



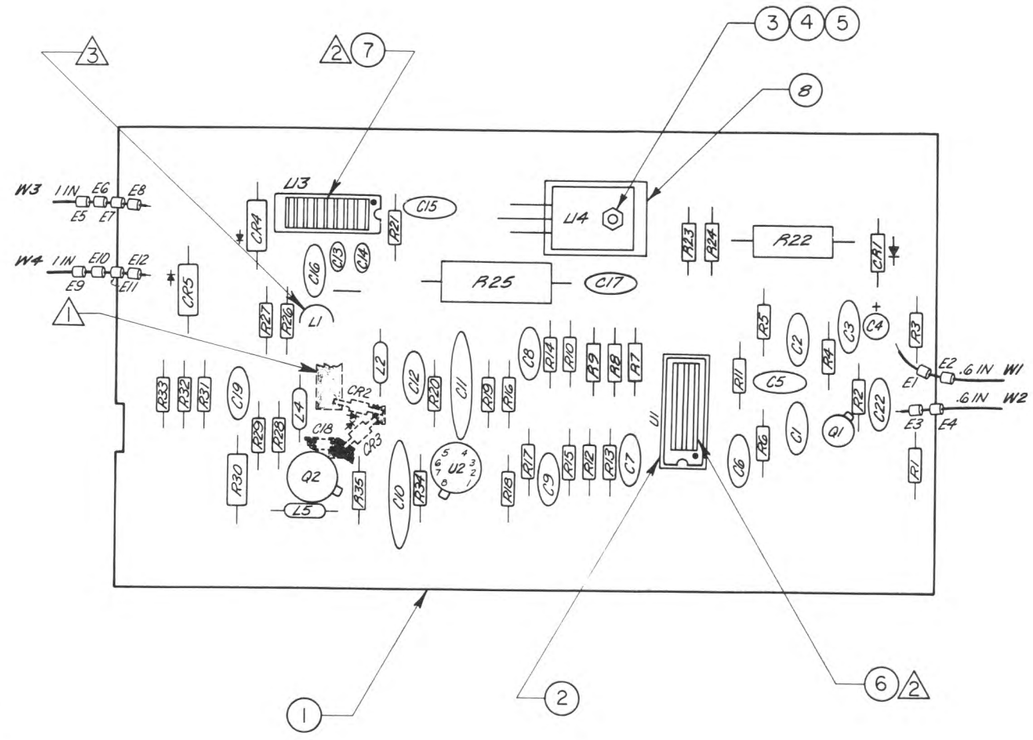
NOTES:
1. L3 NOT USED

SEE SEPARATE PARTS LIST

228988E

Figure 7-6. Model 6601
First LO Schematic Diagram

25R247C



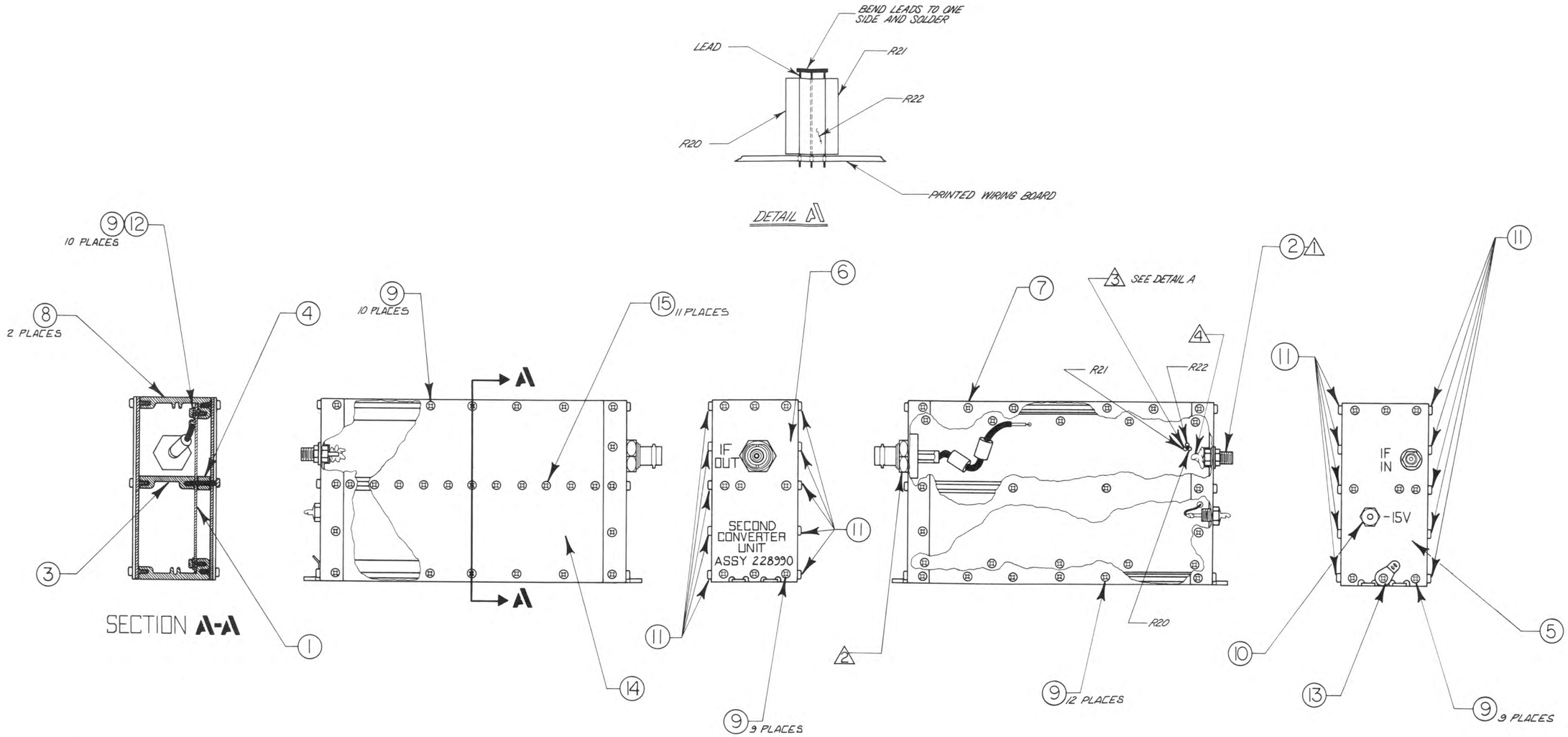
NOTES:

1. MOUNT COMPONENTS CR2, CR3, AND C18 ON CIRCUIT SIDE; SHADED AREA REPRESENTS CIRCUIT FOR CORRECT LOCATION OF COMPONENTS.
2. ITEMS 6 AND 7 BONDED TO IC'S WITH SA PART NUMBER 78953.
3. CUT 1.20 INCHES OF NO. 22 SOLID WHITE WIRE SA NO. C0739442. STRIP .25 INCHES BOTH ENDS. LOOP AND INSTALL WITH ENDS OF INSULATION AGAINST BOARD.
4. L3 NOT USED.

228987E

SEE SEPARATE PARTS LIST

Figure 7-7. Model 6601 First LO Printed-Wiring Board Assembly



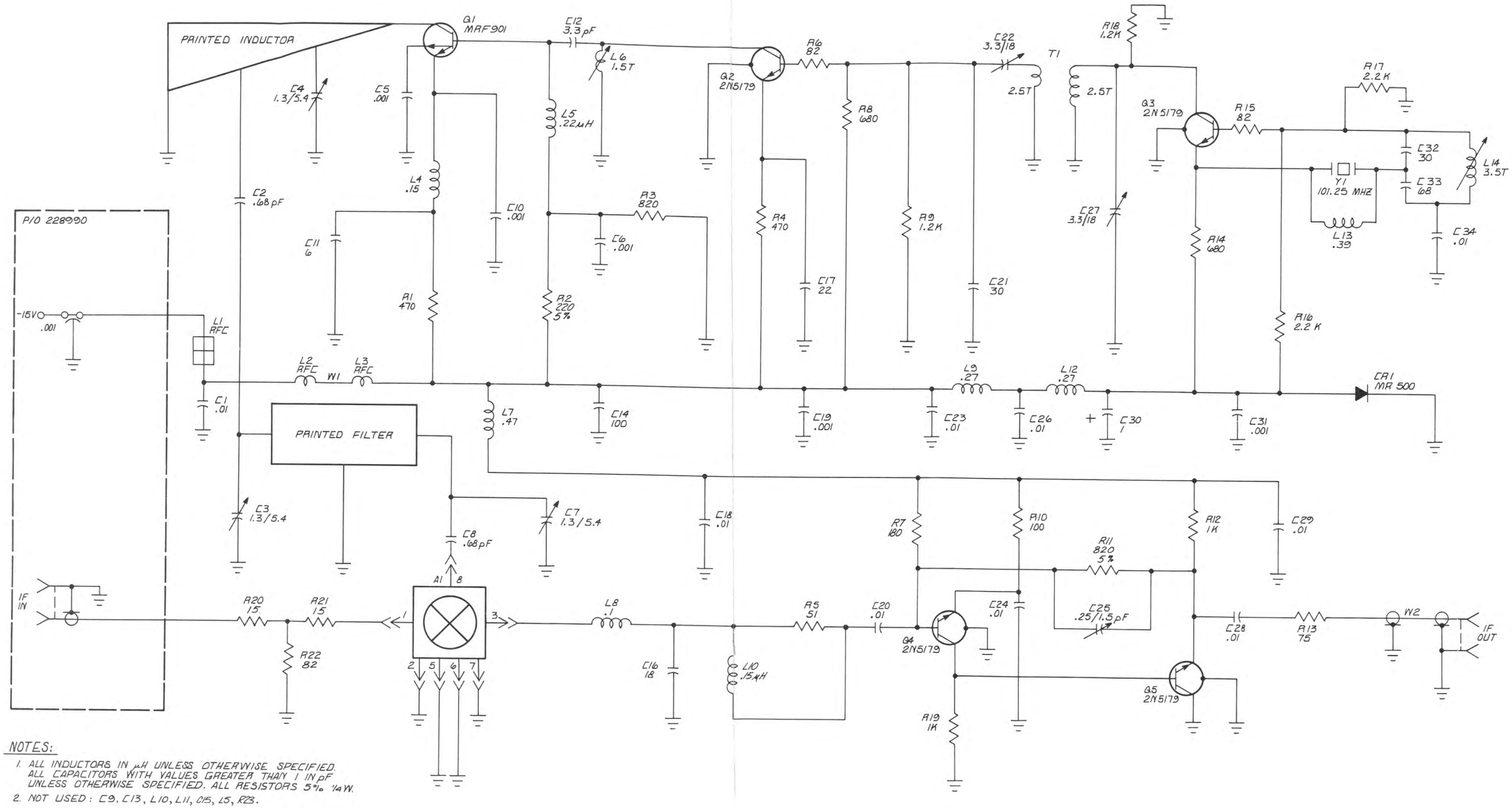
NOTES:

1. ASSEMBLY INSTRUCTIONS:
   a) MOUNT ITEM 8, SIDE PANELS, ONTO ITEM 5, FRONT PANEL. LEAVE EQUAL CLEARANCE ON EACH END OF SIDE PANEL TO FACILITATE REMOVEABLE COVER INSTALLATION.
   b) INSERT ITEM 2, CONNECTOR, INTO ITEM 5, FRONT PANEL. DO NOT SECURE WITH HARDWARE UNTIL AFTER SOLDERING TO BOARD.
   c) SLIDE ITEM 1, BOARD, INTO HOUSING AND SOLDER CONNECTOR TAB TO BOARD BOTTOM AND CONNECTOR LUG TO BOARD TOP AS SHOWN.
   d) INSTALL CONNECTOR MOUNTING HARDWARE THEN SECURE ITEM 1, BOARD, TO ITEM 8, SIDE PANELS, USING ITEMS 9 AND 12.
   e) INSTALL REMAINING BOX PARTS AS SHOWN.
2. INSTALL BNC CONNECTOR INTO ITEM 6 "D" HOLE USING SUPPLIED HARDWARE.
3. INSTALL R20, R21, AND R22 ON PRINTED WIRING BOARD AFTER MOUNTING PRINTED WIRING BOARD IN SECOND CONVERTER UNIT.
4. AT LEAST 80% OF GAP BETWEEN PRINTED WIRING BOARD AND CONNECTOR MUST BE BRIDGED WITH GOOD SOLDER FLOW.

228990A

SEE SEPARATE PARTS LIST

Figure 7-8. Model 6600 Second Converter Module Assembly

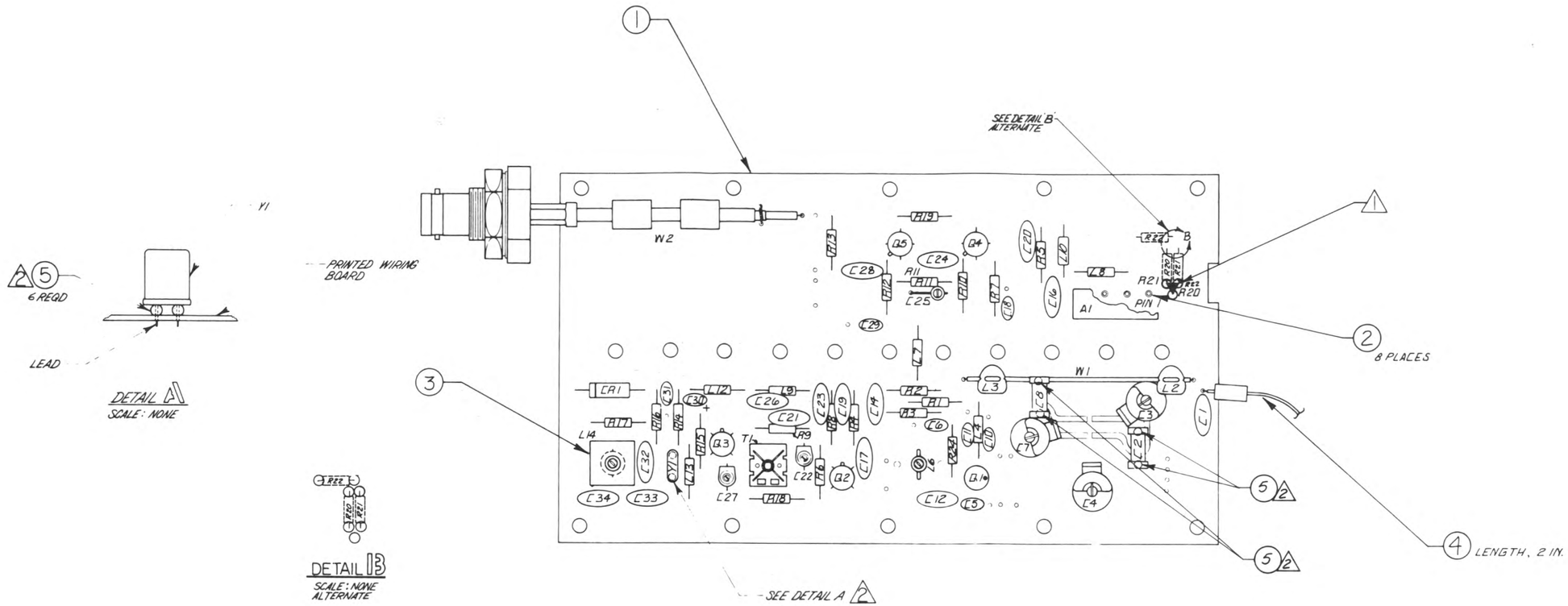


NOTES:

1. ALL INDUCTORS IN µH UNLESS OTHERWISE SPECIFIED. ALL CAPACITORS WITH VALUES GREATER THAN 1 IN pF UNLESS OTHERWISE SPECIFIED. ALL RESISTORS 5% 1/4 W.
2. NOT USED: C9, C13, L10, L11, C15, L5, R23.

228993E

Figure 7-9. Series 6600 Second Converter Schematic Diagram



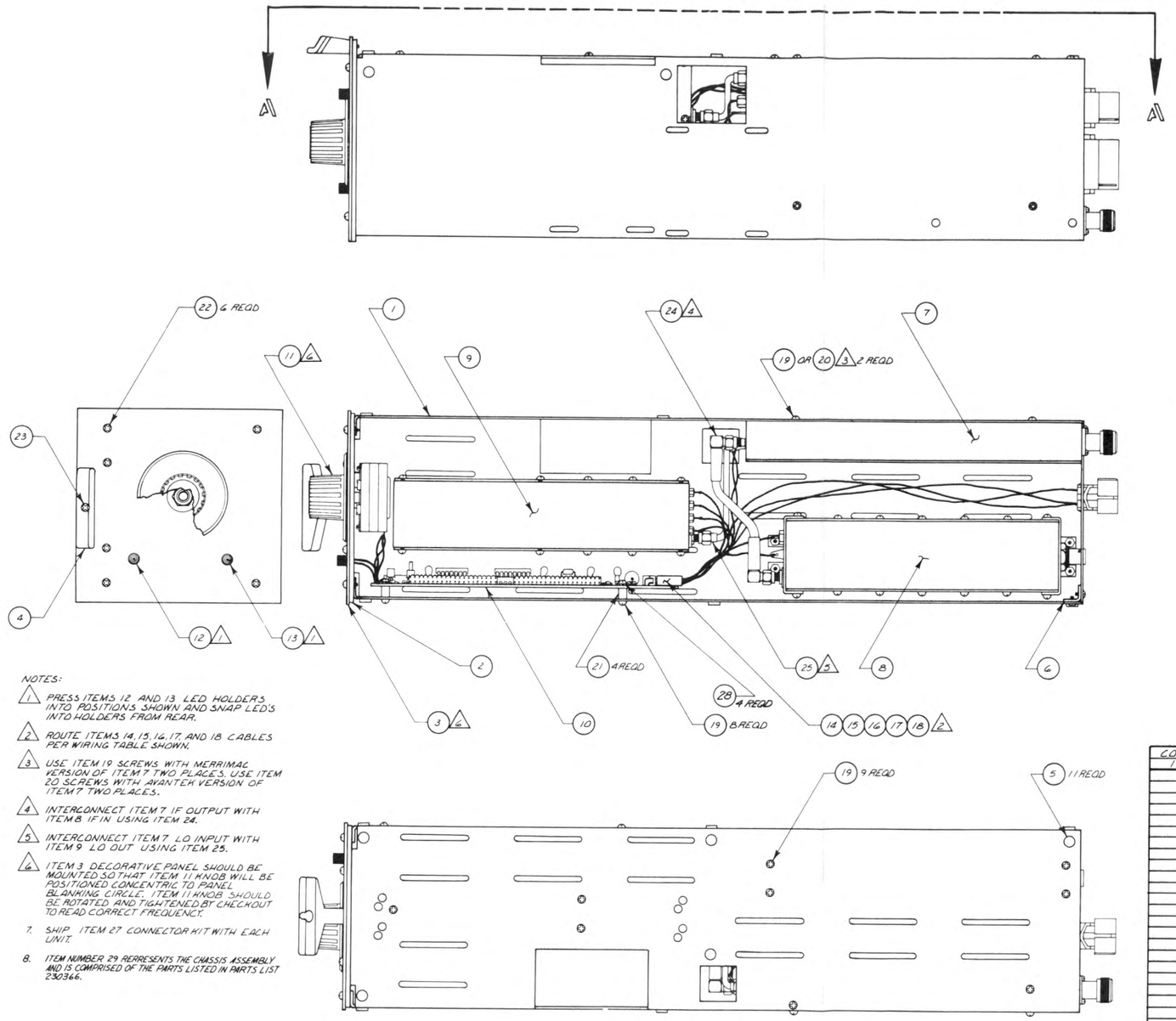
NOTES:

1. INSTALL R20, R21, AND R22 ON PRINTED WIRING BOARD AFTER MOUNTING PRINTED WIRING BOARD IN SECOND CONVERTER UNIT.
2. INSTALL GLASS BEAD SPACERS TO CRYSTAL LEADS BEFORE MOUNTING TO PRINTED WIRING BOARD, ON Y1, C2 AND C8.

SEE SEPARATE PARTS LIST

228992C

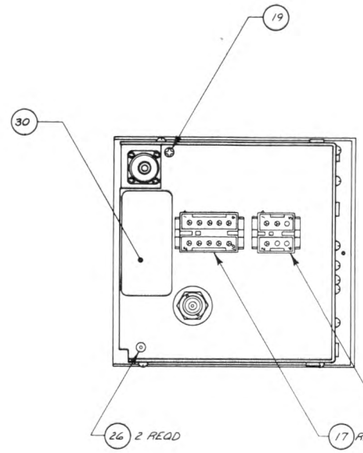
Figure 7-10. Series 6600 Second Converter, Printed-Wiring Board Assembly



NOTES:

1. PRESS ITEMS 12 AND 13 LED HOLDERS INTO POSITIONS SHOWN AND SNAP LED'S INTO HOLDERS FROM REAR.
2. ROUTE ITEMS 14, 15, 16, 17, AND 18 CABLES PER WIRING TABLE SHOWN.
3. USE ITEM 19 SCREWS WITH MERRIMAC VERSION OF ITEM 7 TWO PLACES. USE ITEM 20 SCREWS WITH AVANTEK VERSION OF ITEM 7 TWO PLACES.
4. INTERCONNECT ITEM 7 IF OUTPUT WITH ITEM 8 IF IN USING ITEM 24.
5. INTERCONNECT ITEM 7 LO INPUT WITH ITEM 9 LO OUT USING ITEM 25.
6. ITEM 3 DECORATIVE PANEL SHOULD BE MOUNTED SO THAT ITEM 11 KNOB WILL BE POSITIONED CONCENTRIC TO PANEL BLANKING CIRCLE. ITEM 11 KNOB SHOULD BE ROTATED AND TIGHTENED BY CHECKOUT TO READ CORRECT FREQUENCY.
7. SHIP ITEM 27 CONNECTOR KIT WITH EACH UNIT.
8. ITEM NUMBER 29 REPRESENTS THE CHASSIS ASSEMBLY AND IS COMPRISED OF THE PARTS LISTED IN PARTS LIST 230366.

230260C

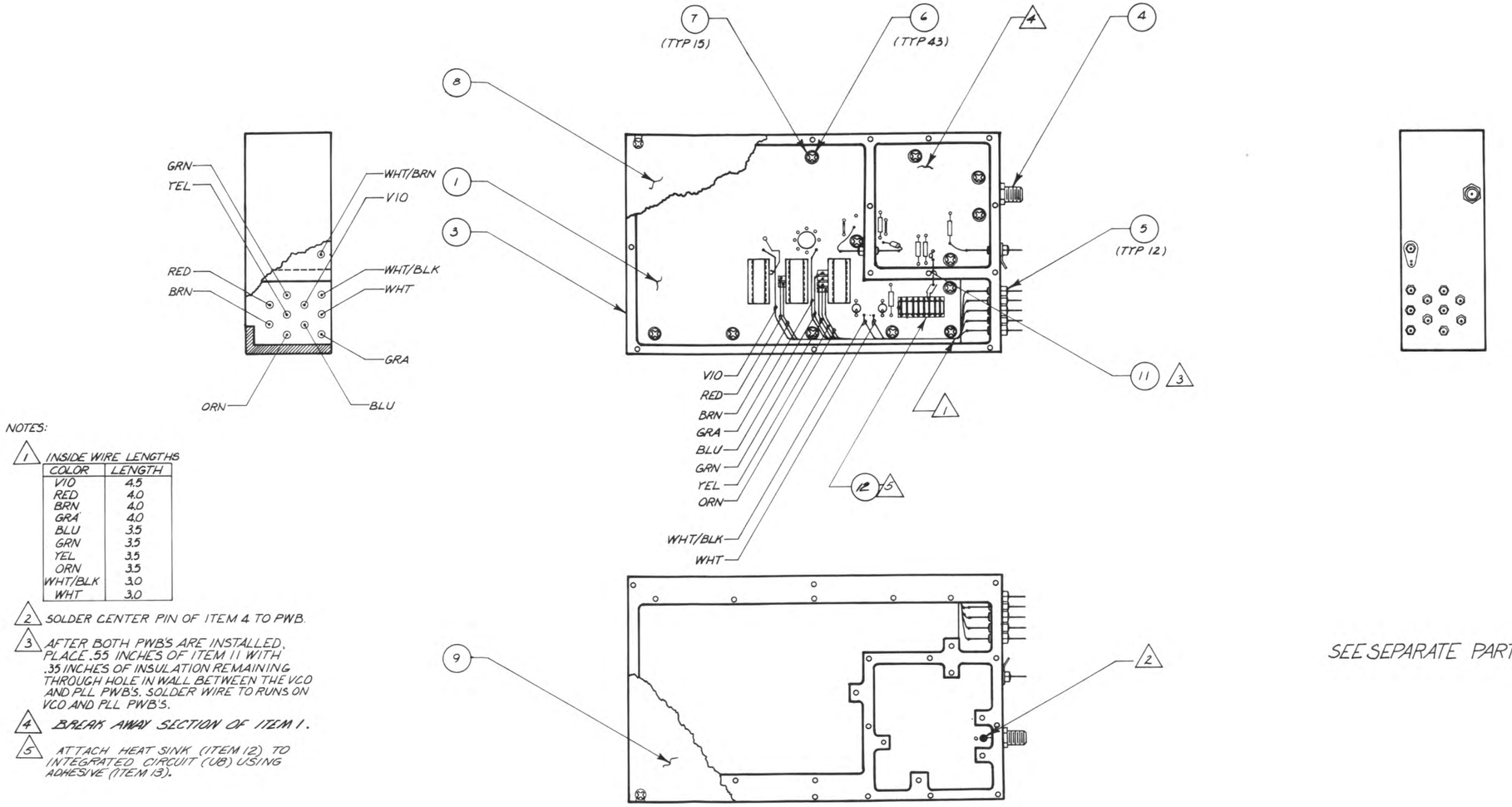


SEE SEPARATE PARTS LISTS 230260 & 230366

CONNECTOR ASSY ITEM NO.	WIRE COLOR	ORIGIN	DESTINATION	REMARKS
14		DOWN CONVERTER REAR PANEL	ITEM 10 J3	SNAP REAR PANEL CONNECTOR INTO PLACE.
15	WHT/VIO	ITEM 8 -15V	ITEM 10 J4	SOLDER WIRES TO ITEM 8 AS INDICATED.
	BLK	ITEM 8 GND LUG		
16	WHT/RED	ITEM 7 +15V	ITEM 10 J6	SOLDER WIRES TO ITEM 7 AS INDICATED.
	BLK	ITEM 7 GND LUG		
17		DOWN CONVERTER REAR PANEL	ITEM 10 J1	SNAP REAR PANEL CONNECTOR INTO PLACE.
18	BRN	ITEM 9 E1	ITEM 10 J2	SOLDER WIRES TO ITEM 9 AS INDICATED.
	RED	ITEM 9 E2		
	ORN	ITEM 9 E3		
	YEL	ITEM 9 E4		
	GRN	ITEM 9 E5		
	BLU	ITEM 9 E6		
	VIO	ITEM 9 E7		
	GRA	ITEM 9 E8		
	WHT	ITEM 9 E9		
	BLK/WHT	ITEM 9 E10		
	BRN/WHT	ITEM 9 E11		
	RED/WHT	ITEM 9 GND LUG		

Figure 7-11. Model 6602 Frequency Agile Downconverter Module Assembly

25R247C



NOTES:

1. INSIDE WIRE LENGTHS

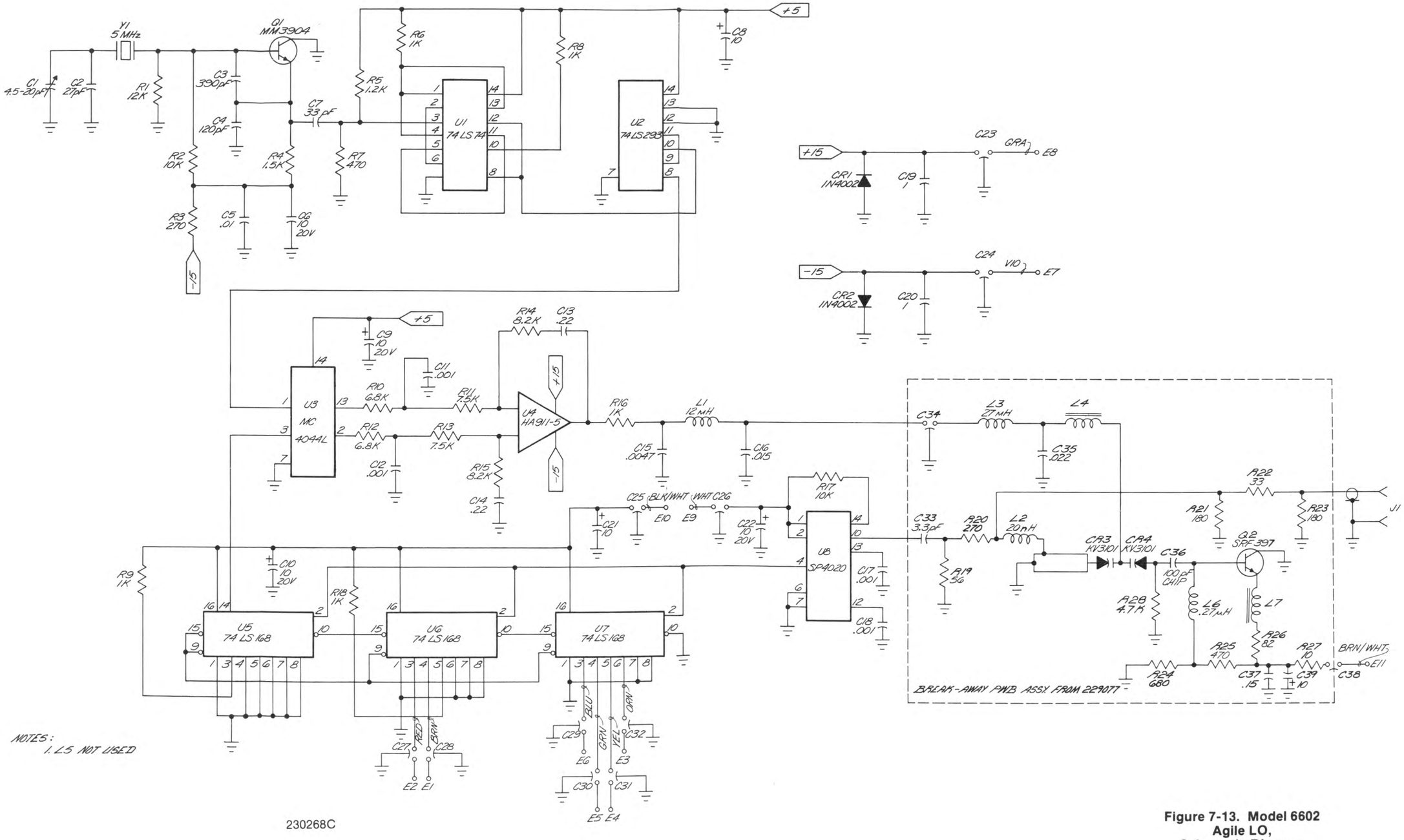
COLOR	LENGTH
VIO	4.5
RED	4.0
BRN	4.0
GRA	4.0
BLU	3.5
GRN	3.5
YEL	3.5
ORN	3.5
WHT/BLK	3.0
WHT	3.0

2. SOLDER CENTER PIN OF ITEM 4 TO PWB.
3. AFTER BOTH PWB'S ARE INSTALLED, PLACE .55 INCHES OF ITEM 11 WITH .35 INCHES OF INSULATION REMAINING THROUGH HOLE IN WALL BETWEEN THE VCO AND PLL PWB'S. SOLDER WIRE TO RUNS ON VCO AND PLL PWB'S.
4. BREAK AWAY SECTION OF ITEM 1.
5. ATTACH HEAT SINK (ITEM 12) TO INTEGRATED CIRCUIT (U8) USING ADHESIVE (ITEM 13).

SEE SEPARATE PARTS LIST

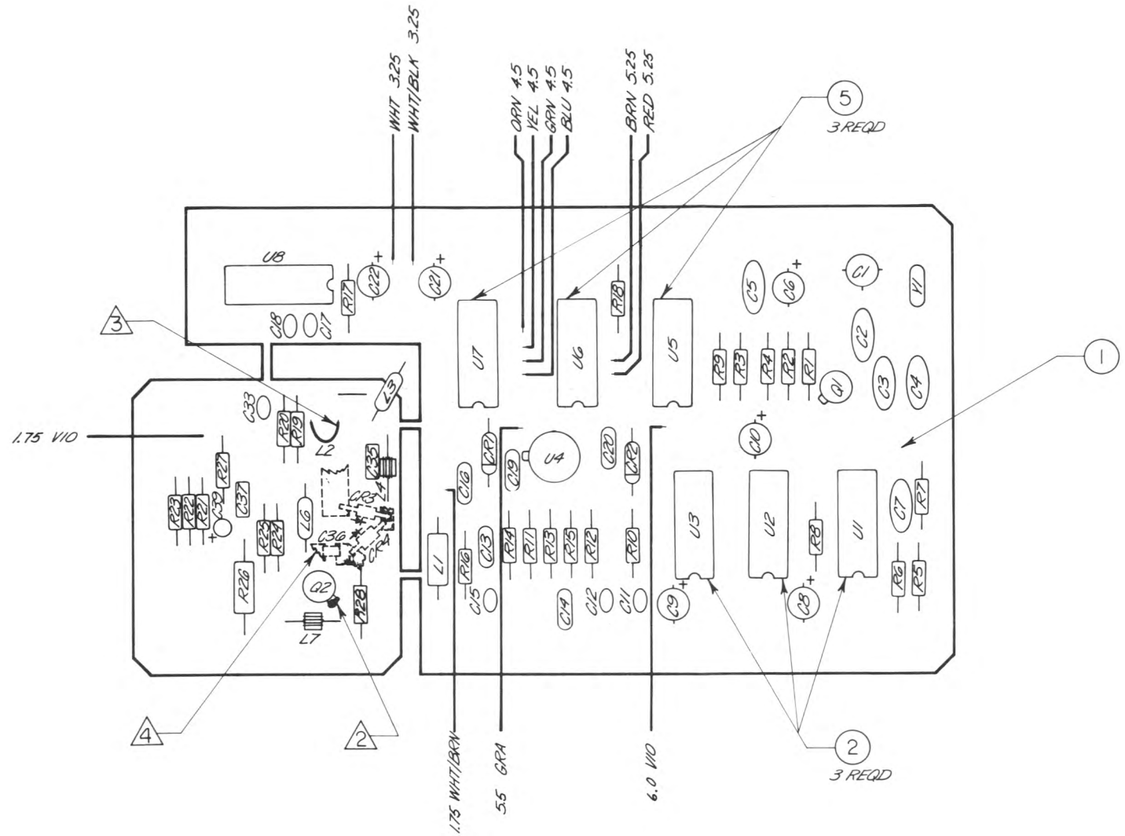
230265B

Figure 7-12. Model 6602 Agile LO Assembly



230268C

Figure 7-13. Model 6602 Agile LO, Schematic Diagram

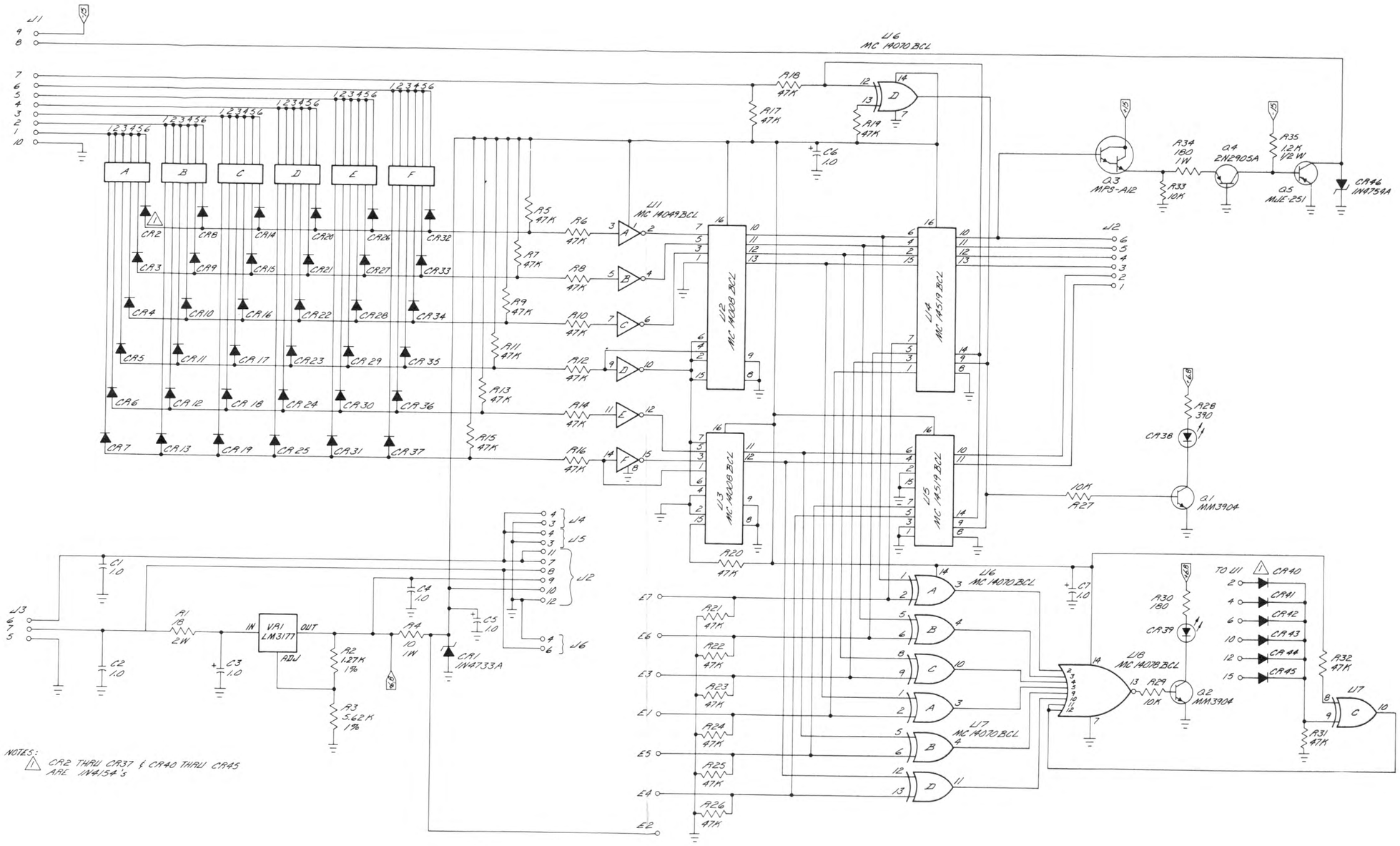


NOTES:

2. SOLDER TRANSISTOR EMMITTER TAB TO BOARD.
3. CUT 1.20 INCHES OF NO.22 SOLID WHITE WIRE SA NO. 0073442. STRIP .25 INCHES BOTH ENDS. LOOP AND INSTALL WITH ENDS OF INSULATION AGAINST BOARD.
4. MOUNT COMPONENTS C36, CR3, AND CR4 ON CIRCUIT SIDE. SHADED AREAS REPRESENT CIRCUIT FOR CORRECT LOCATION OF COMPONENTS.
1. L5 NOT USED.

229077D

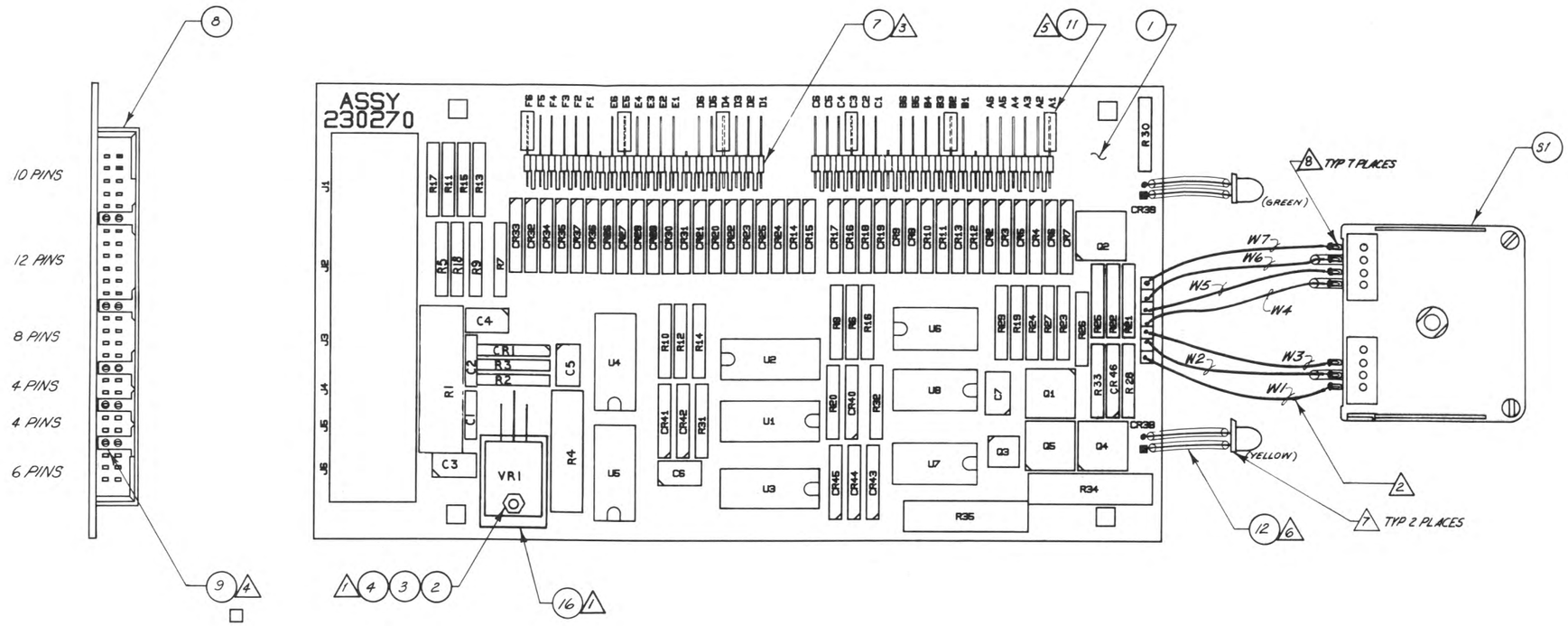
Figure 7-14. Model 6602 Agile LO Printed-Wiring Board Assembly



230232A

Figure 7-15. Model 6602 Interface Logic Board Schematic Diagram

25R247C

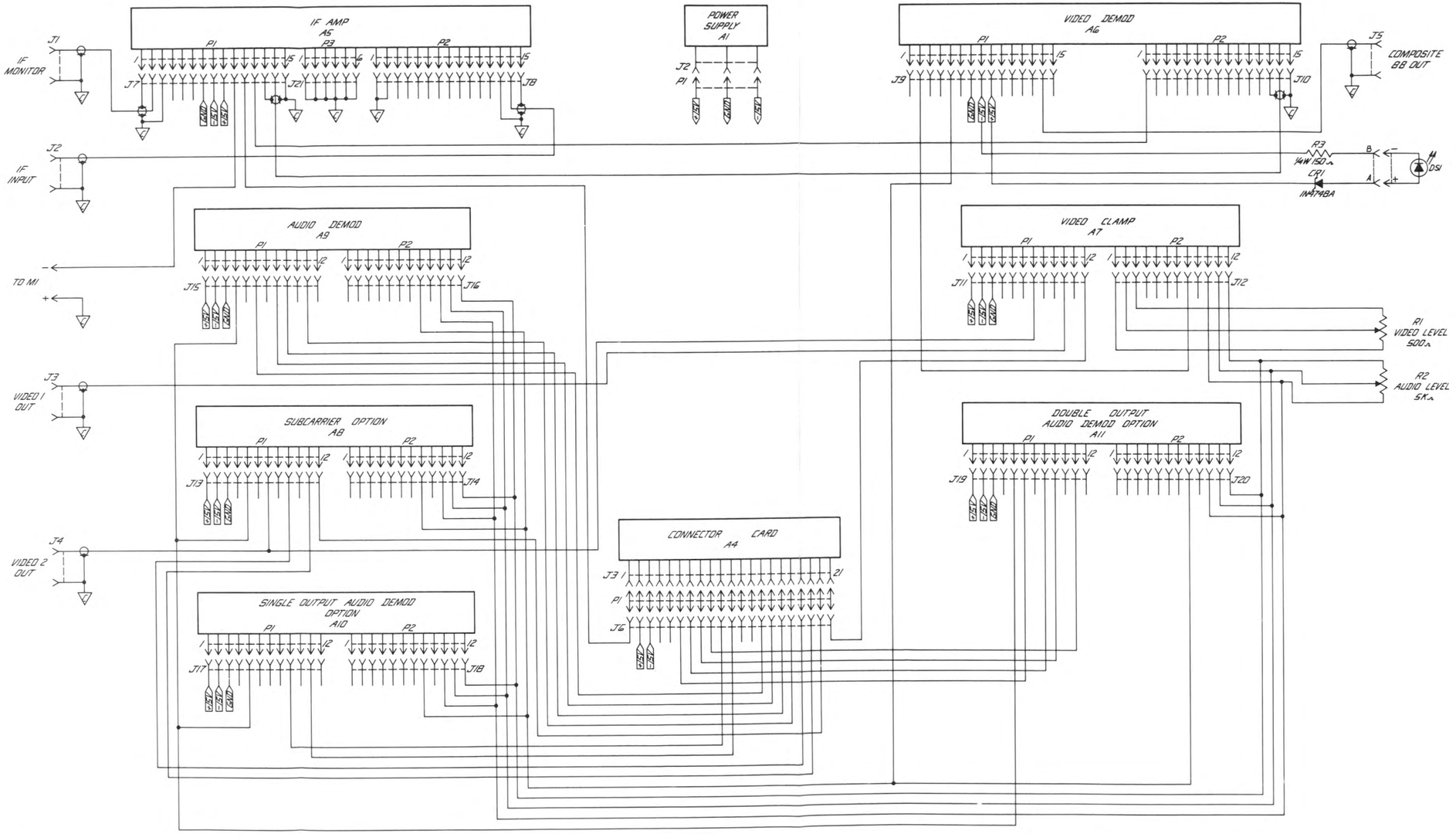


NOTES:

1. INSTALL ITEMS 2,3,4 & 16 AFTER WAVE SOLDER. VR1 MUST BE SNUG AGAINST **ITEM 16.**
2. 2.25" OF W1 THRU W7 INSTALLED BY WAVE SOLDER. S1 MUST BE INSTALLED AS SHOWN (SHAFT DOWN) AFTER WAVE SOLDER.
3. ITEM 7 (TYP 2) MUST HAVE SEVENTH AND FOURTEENTH PAIRS CUT OUT PRIOR TO INSTALLING ON PW BOARD.
4. ITEM 9 (TYP 5) INSTALLED IN EXACT POSITIONS SHOWN.
5. ITEM 11 (TYP 6) INSTALLED IN CHECKOUT.
6. 0.9" OF ITEM 12 (TYP 4) INSTALLED OVER BOTH LEADS OF LED'S. INSTALL WITH TUBING SNUG AGAINST LED AND PW BOARD.
7. FLAT ON LED MOUNTS TO SQUARE PAD ON PWB.
8. USE HOT MELT GLUE FOR STRAIN RELIEF.

230270D

Figure 7-16, Model 6602 Interface Logic Board Printed-Wiring Board Assembly

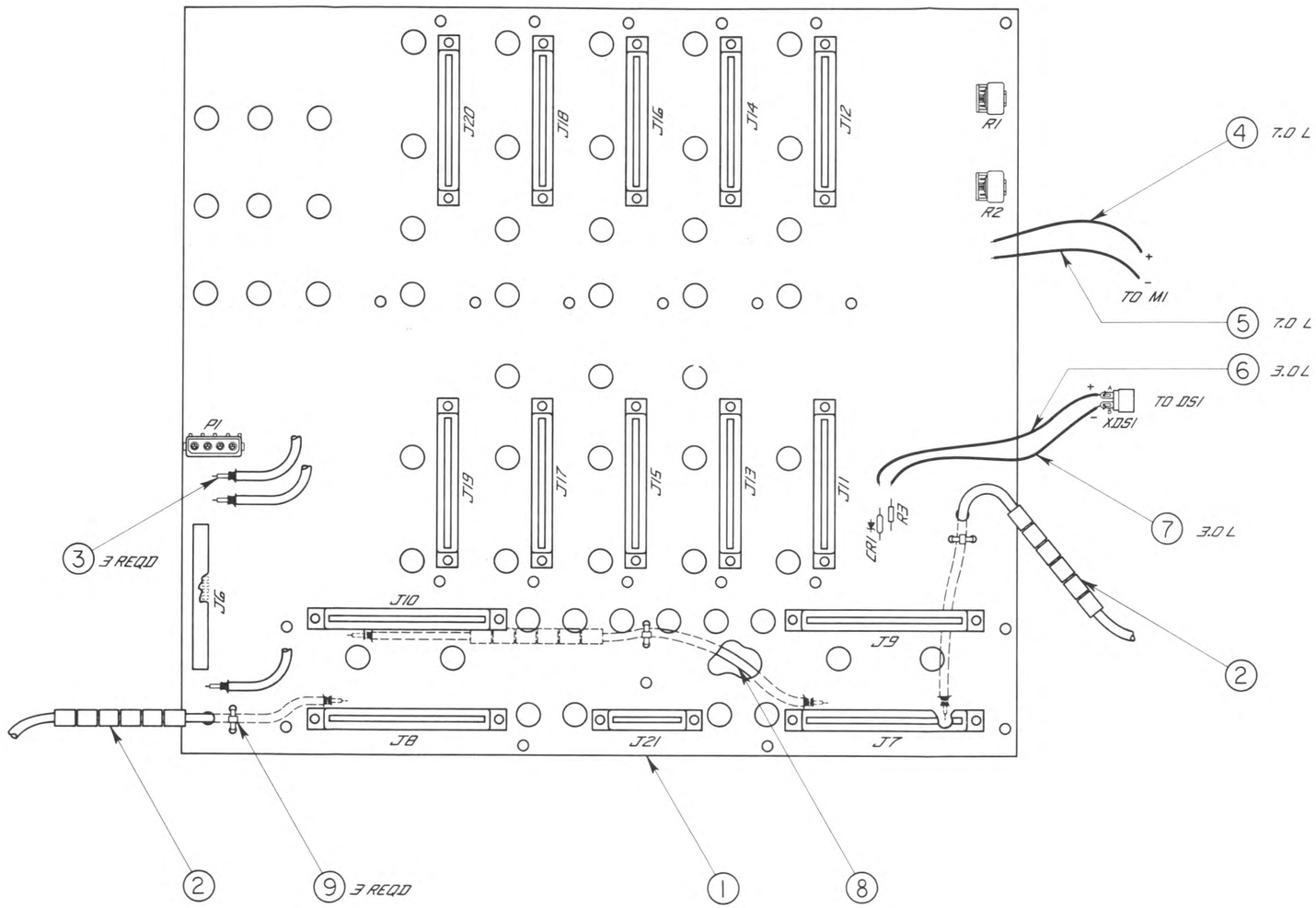


NOTE:

1. A4J3 AND A3J6 NUMBERED 1-21 LEFT TO RIGHT AS VIEWED FROM FRONT OF RECEIVER.

229022A

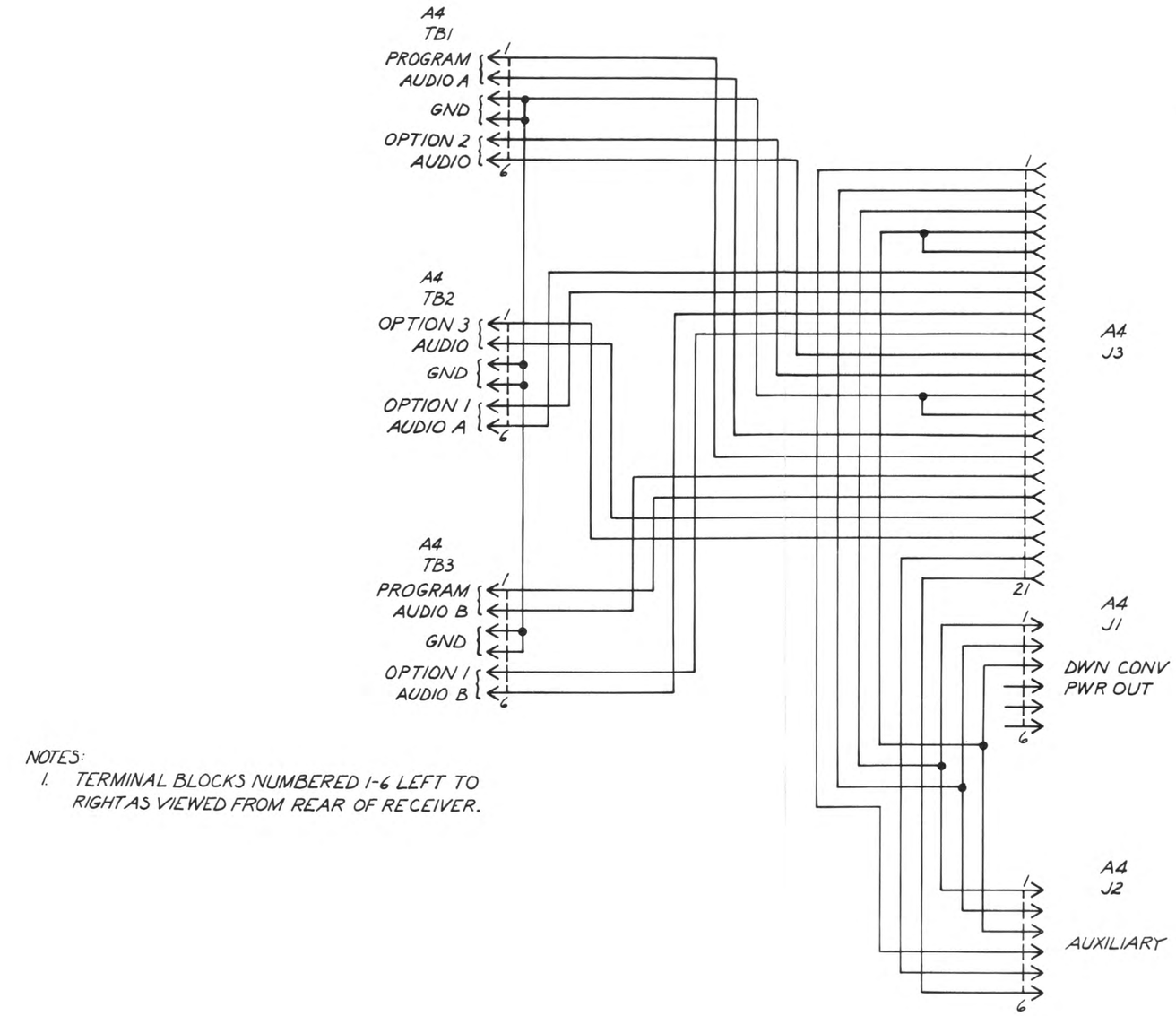
Figure 7-17. Series 6600 Interconnecting Board Schematic Diagram



229020B

SEE SEPARATE PARTS LISTS 229020 AND 230376

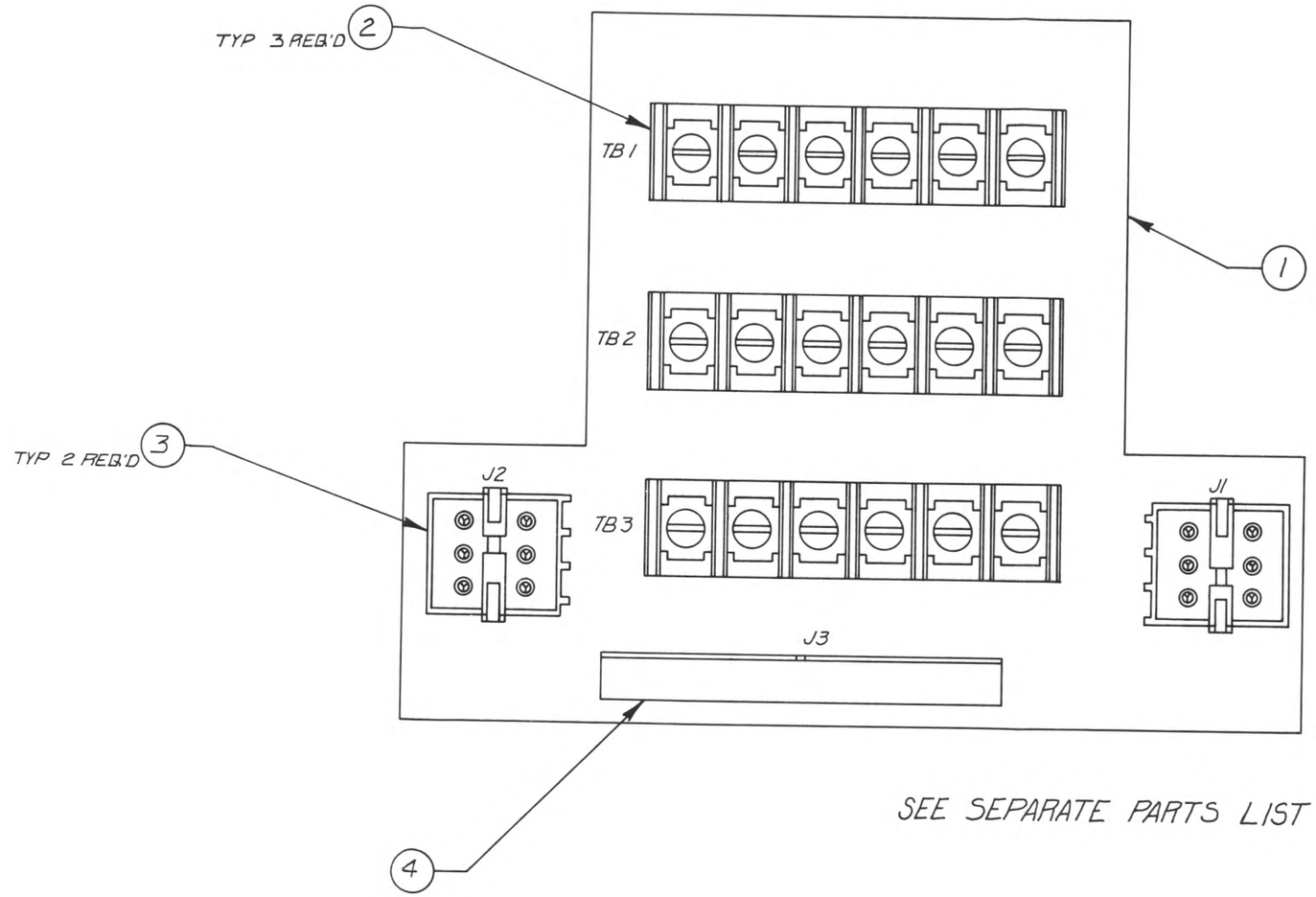
Figure 7-18. Series 6600 Interconnecting Printed-Wiring Board Assembly



NOTES:
1. TERMINAL BLOCKS NUMBERED 1-6 LEFT TO RIGHT AS VIEWED FROM REAR OF RECEIVER.

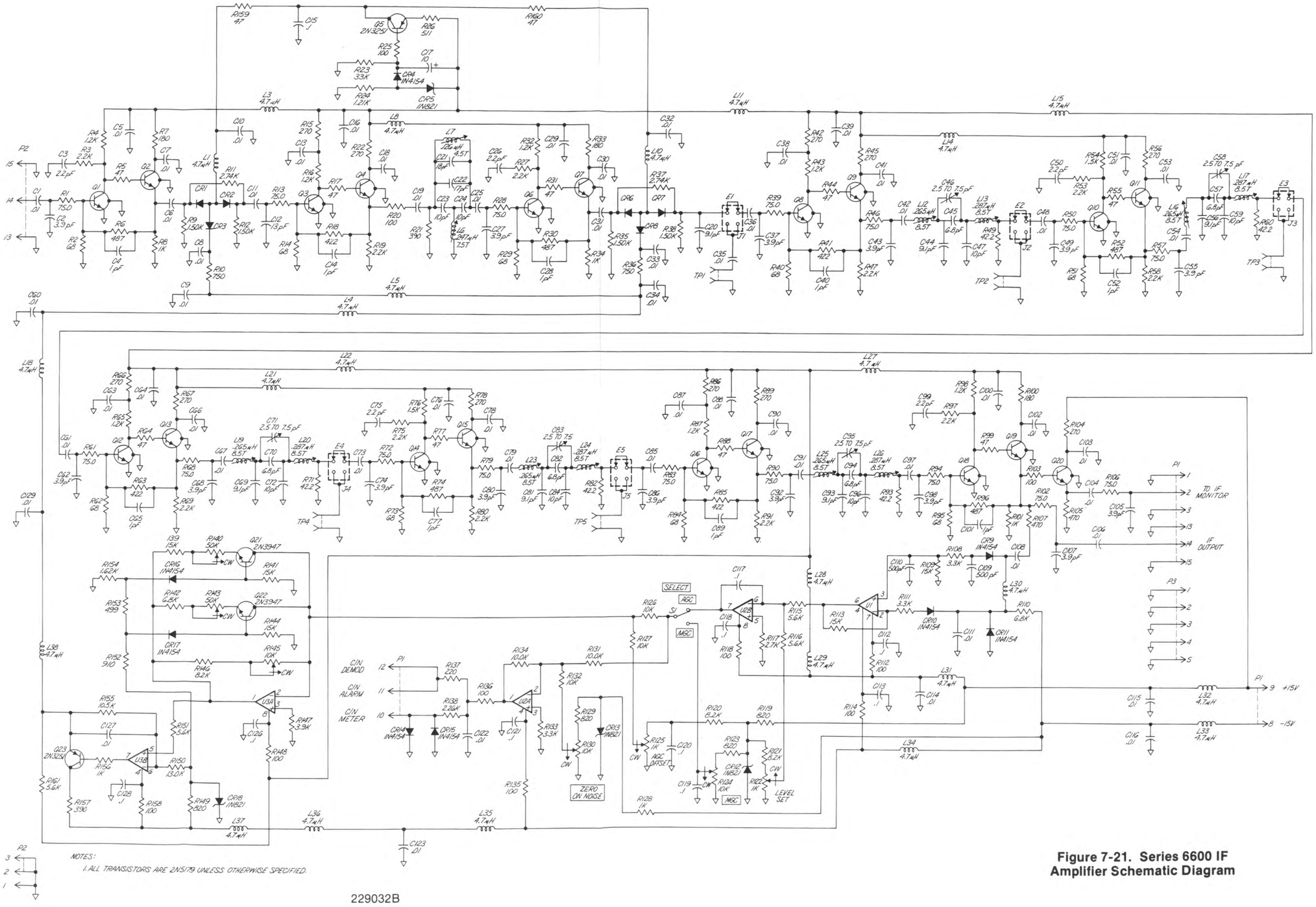
229027

Figure 7-19. Series 6600 Connector Board Schematic Diagram



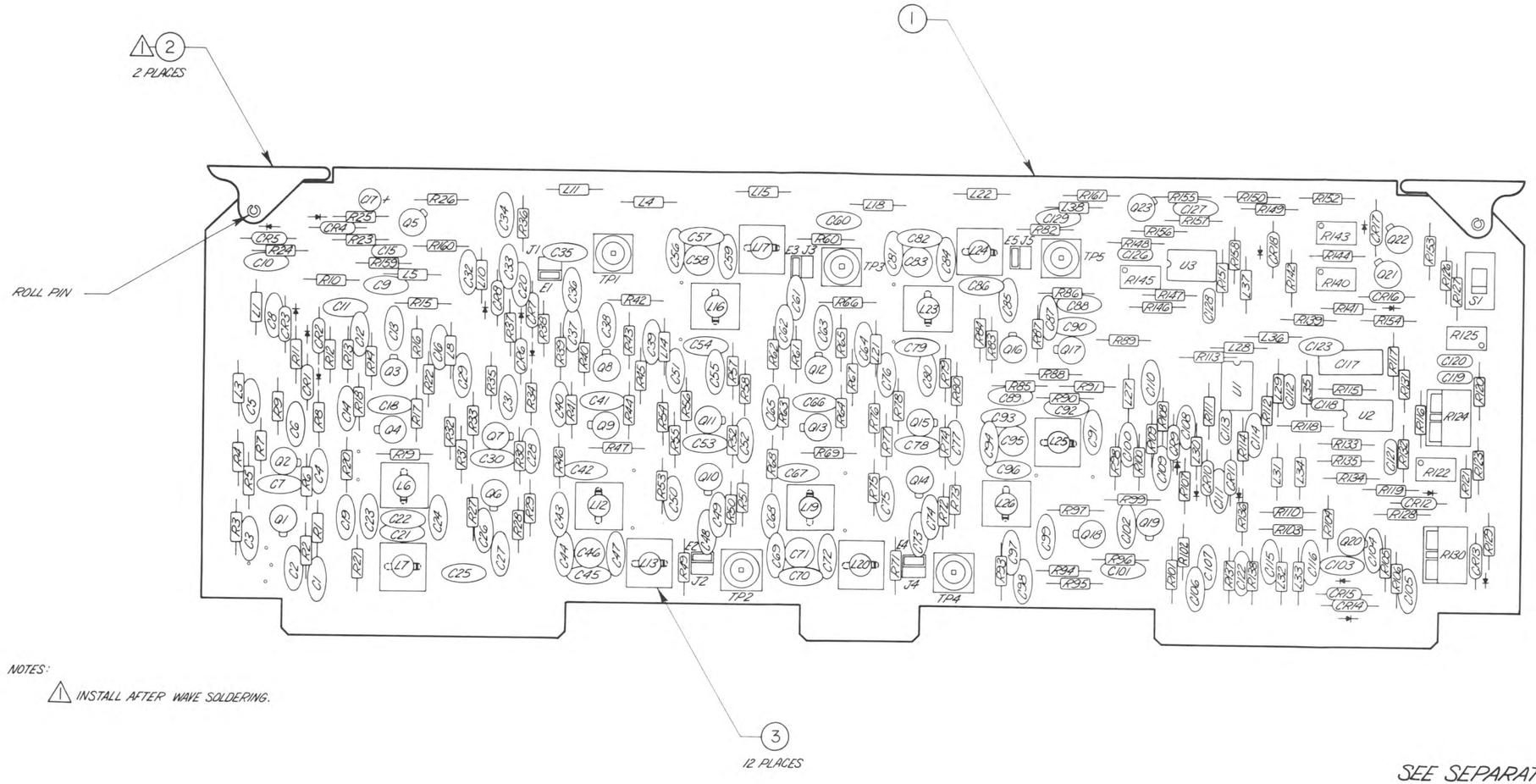
229025A

Figure 7-20. Series 6600 Connector Board Printed-Wiring Board Assembly



229032B

Figure 7-21. Series 6600 IF Amplifier Schematic Diagram



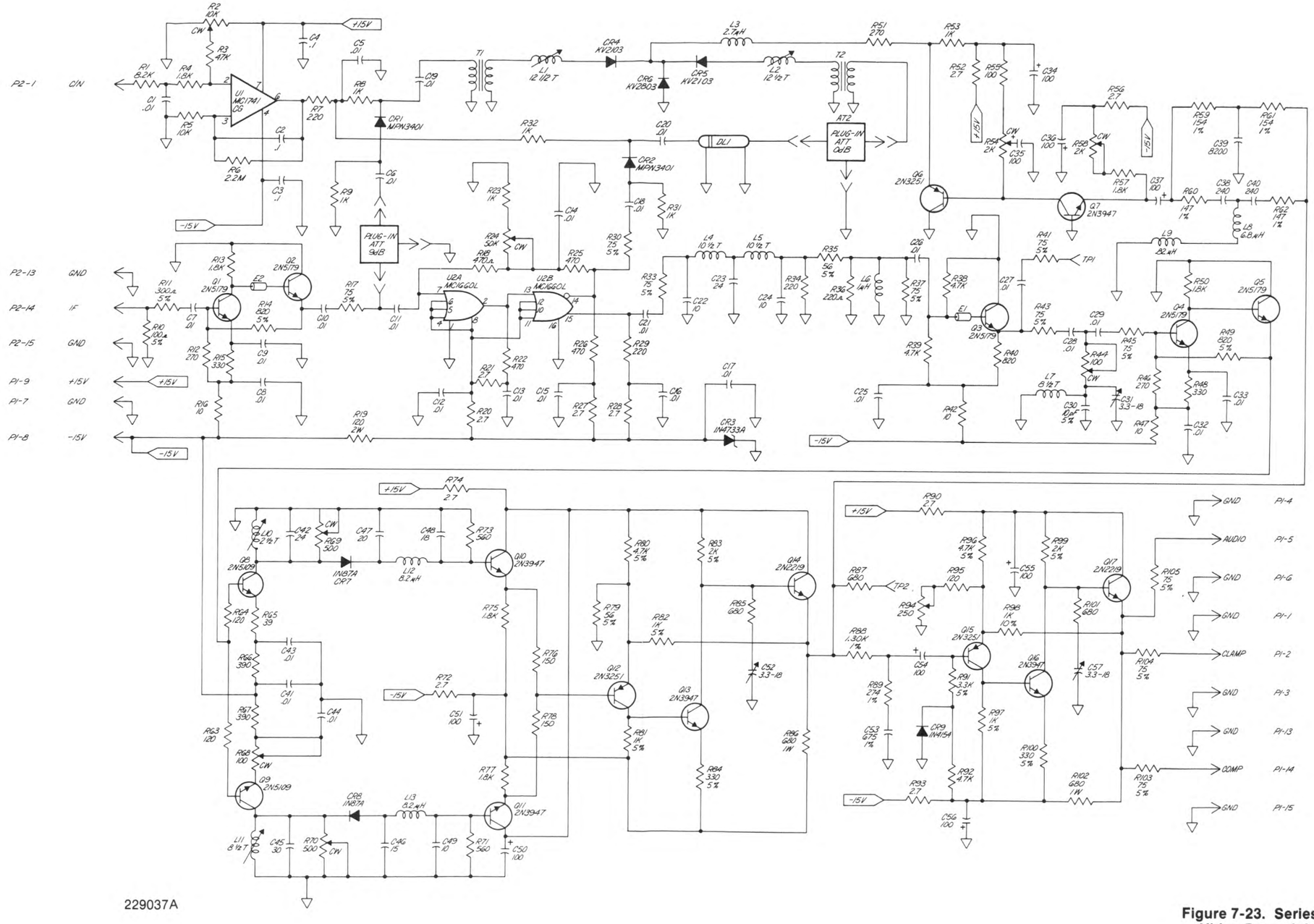
NOTES:

⚠1 INSTALL AFTER WAVE SOLDERING.

SEE SEPARATE PARTS LIST

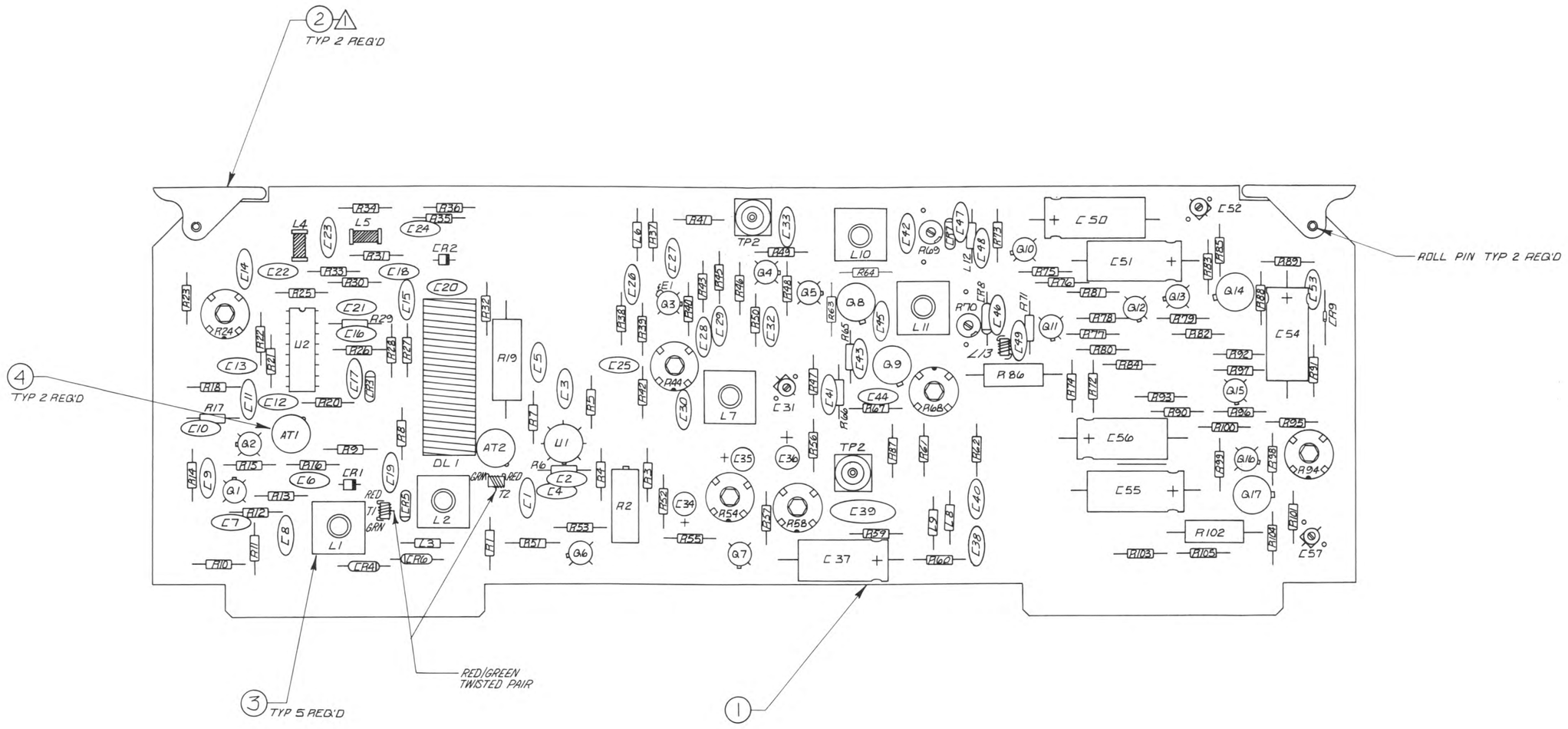
229030

Figure 7-22. Series 6600 IF Amplifier Printed-Wiring Board Assembly



229037A

Figure 7-23. Series 6600 Video Demodulator Schematic Diagram



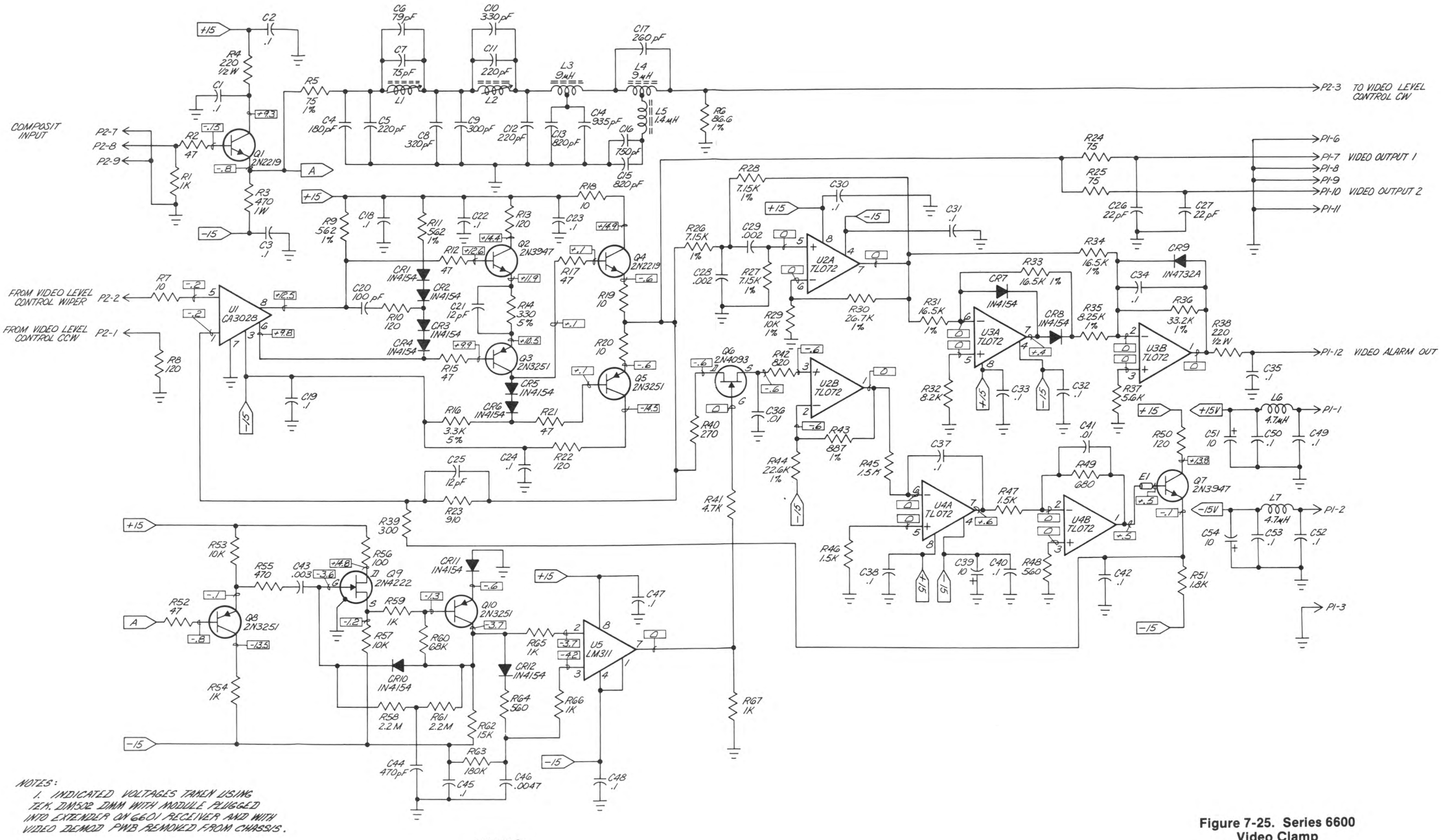
SEE SEPARATE PARTS LIST

NOTES:

⚠ INSTALL AFTER WAVE SOLDERING.

229035D

Figure 7-24. Series 6600 Video Demodulator Printed-Wiring Board Assembly

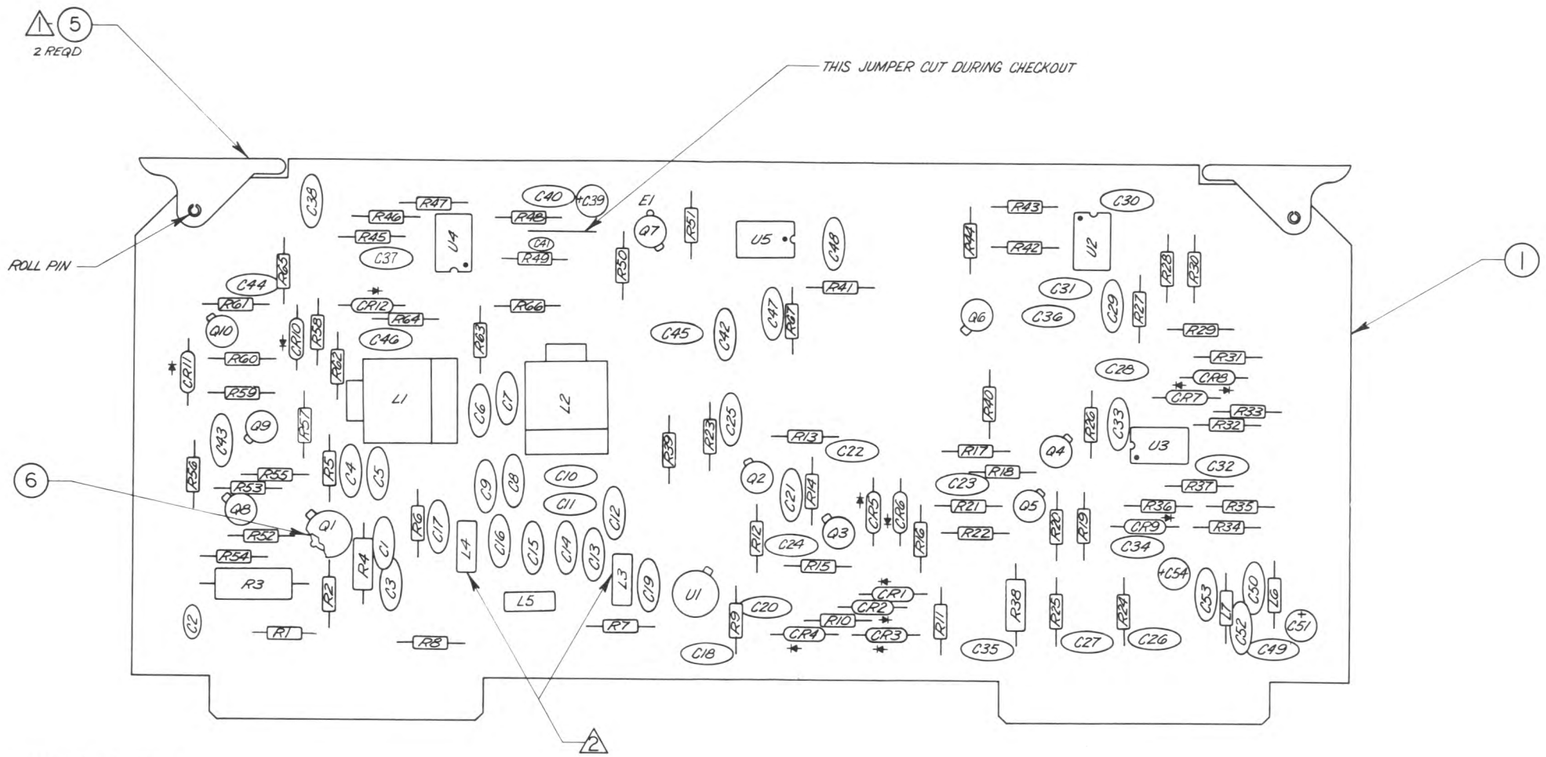


NOTES:
1. INDICATED VOLTAGES TAKEN USING TEK. DM502 DMM WITH MODULE PLUGGED INTO EXTENDER ON 6601 RECEIVER AND WITH VIDEO DEMOD PWB REMOVED FROM CHASSIS.

229042C

Figure 7-25. Series 6600 Video Clamp Schematic Diagram

25R247C



NOTES:

1. INSTALL AFTER WAVE SOLDERING.
2. INSTALL INDUCTOR WITH TWISTED LEADS IN CENTER HOLE.

SEE SEPARATE PARTS LIST

229040A

Figure 7-26. Series 6600 Video Clamp Printed-Wiring Board Assembly

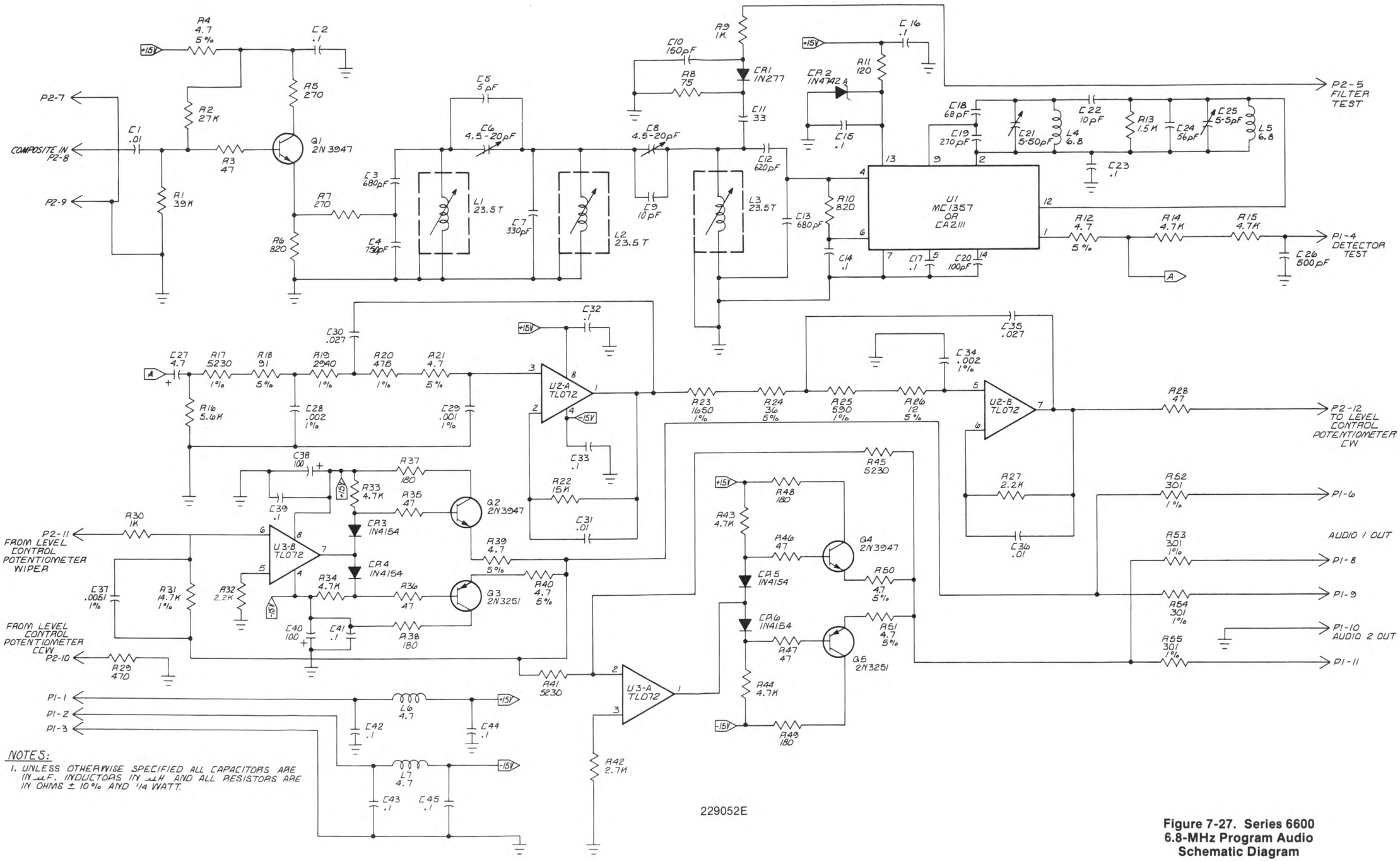
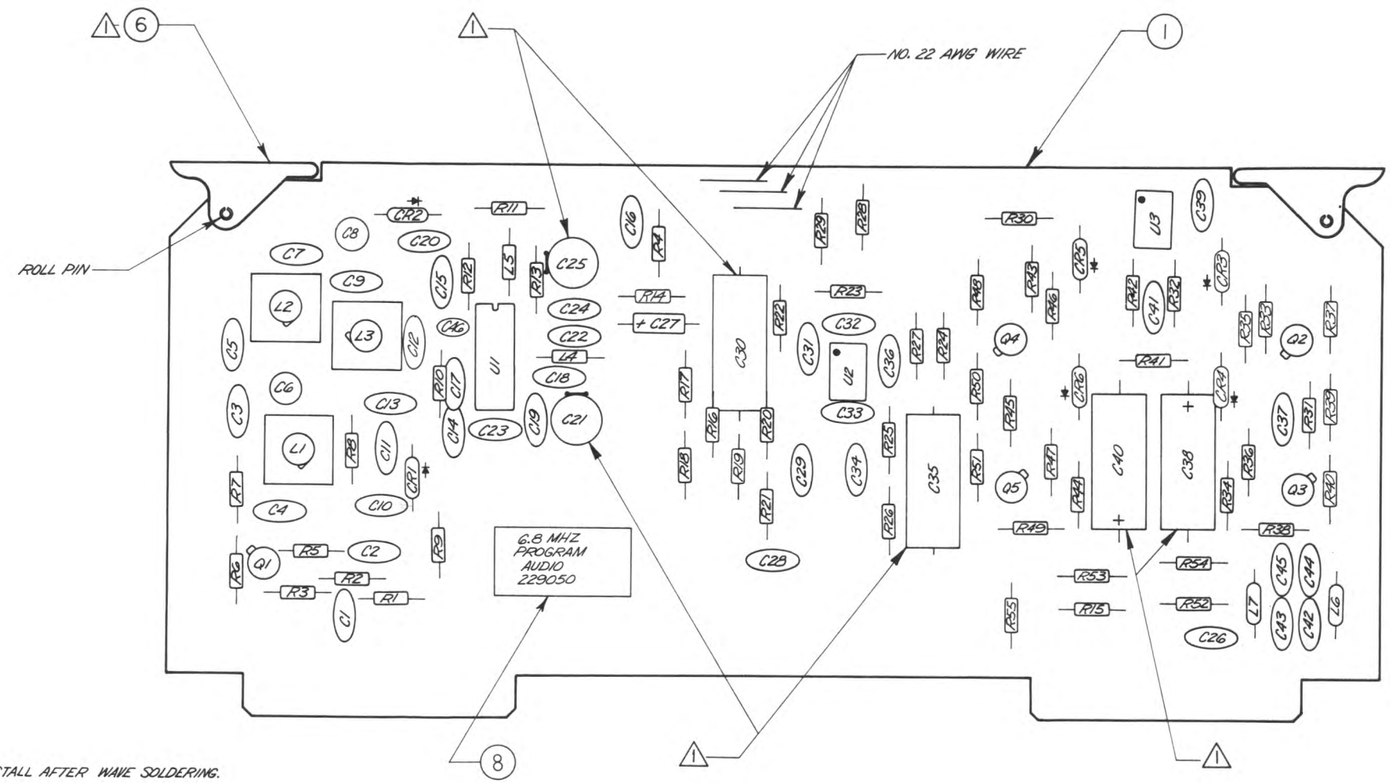


Figure 7-27. Series 6600 6.8-MHz Program Audio Schematic Diagram

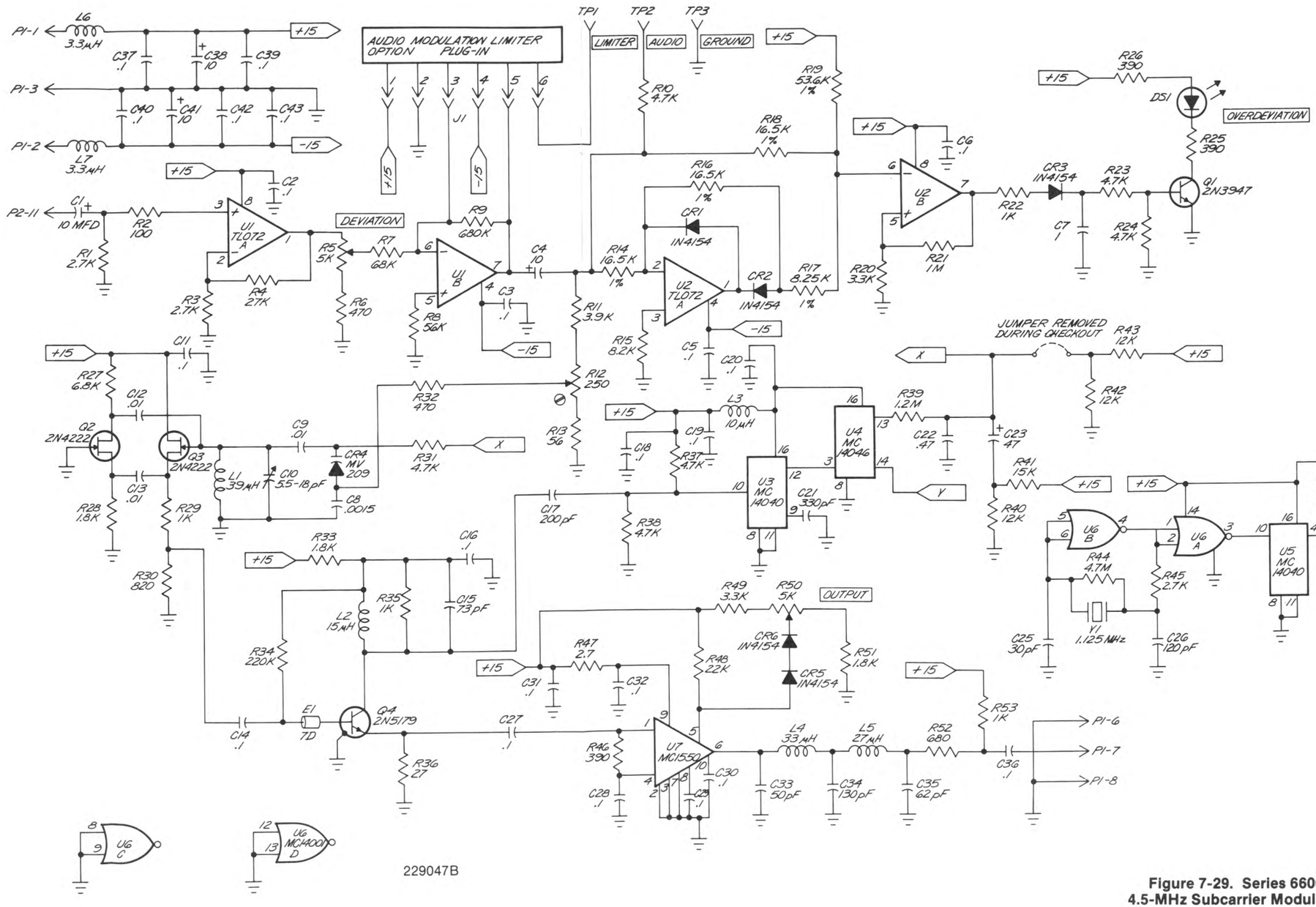


NOTES:

1. INSTALL AFTER WAVE SOLDERING.

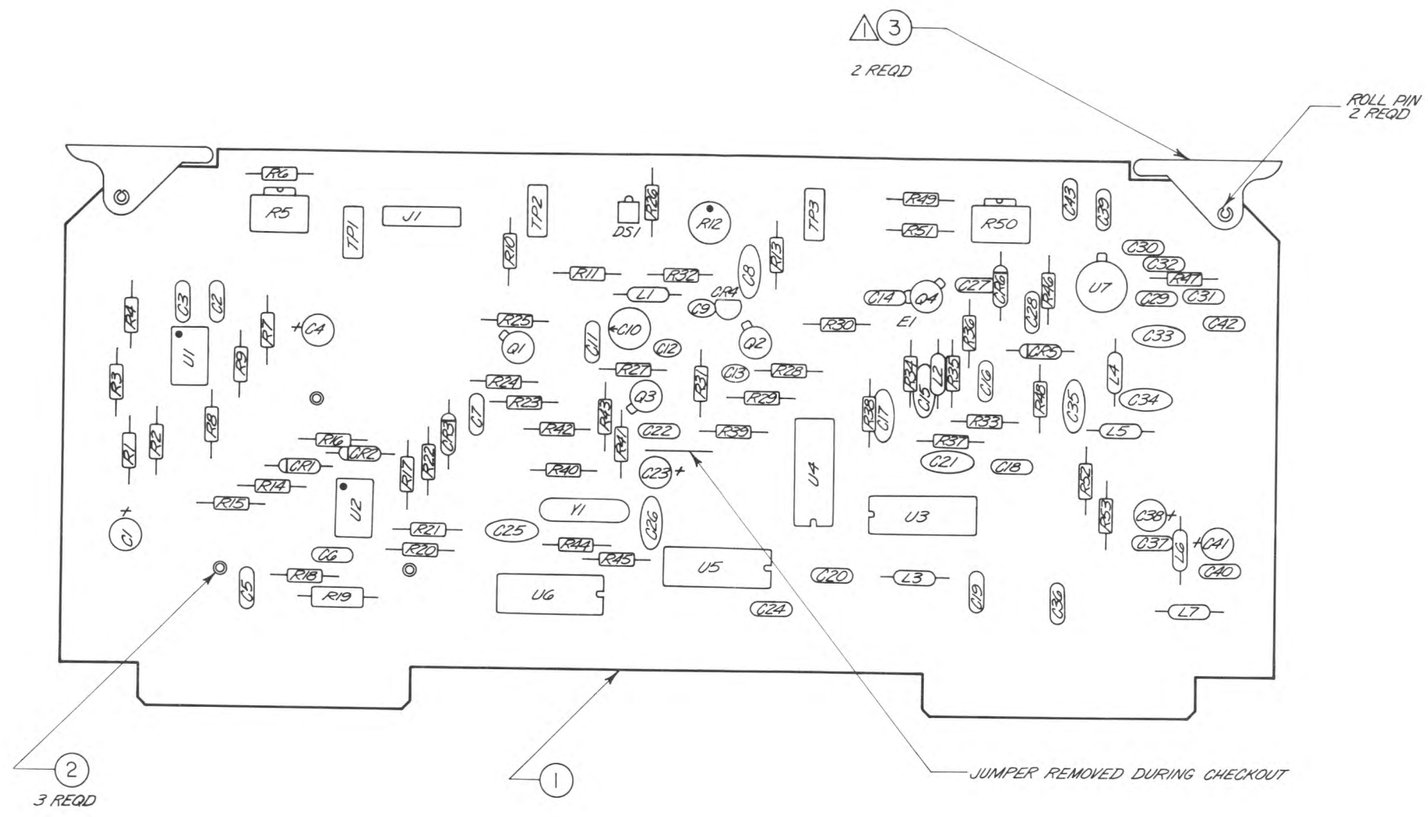
229050D

Figure 7-28. Series 6600 6.8-MHz Program Audio Printed-Wiring Board Assembly



229047B

Figure 7-29. Series 6600 4.5-MHz Subcarrier Modulator Schematic Diagram



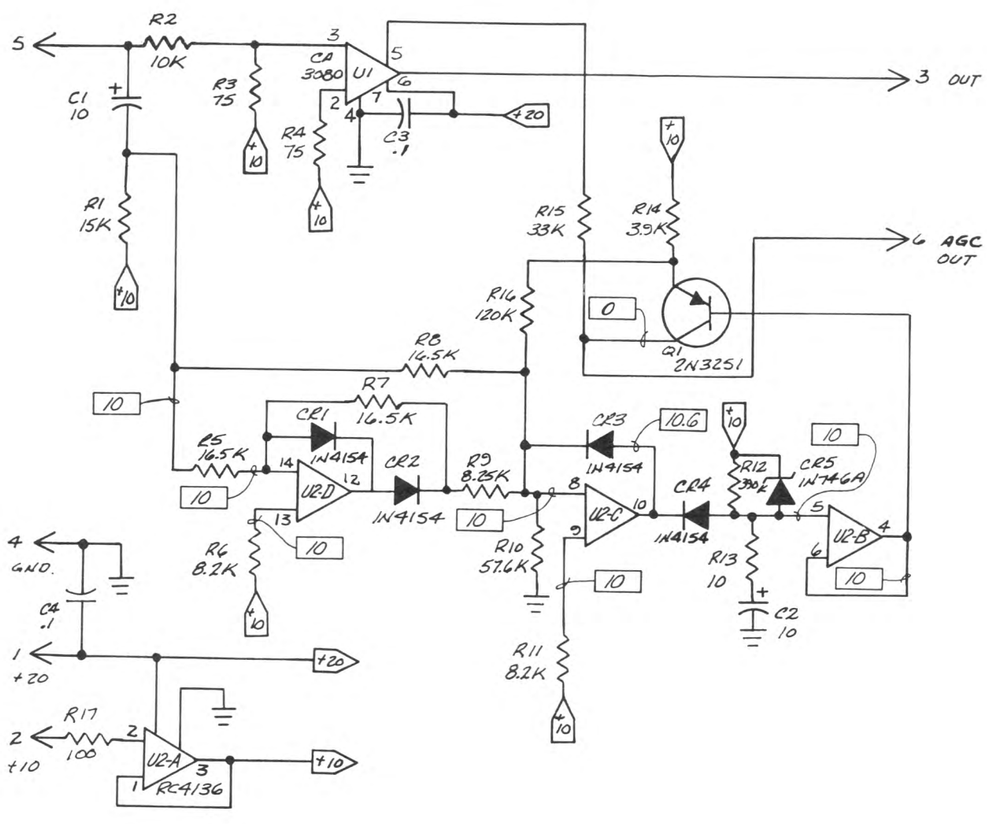
SEE SEPARATE PARTS LIST

NOTES:

⚠1 INSTALL AFTER WAVE SOLDERING.

229045A

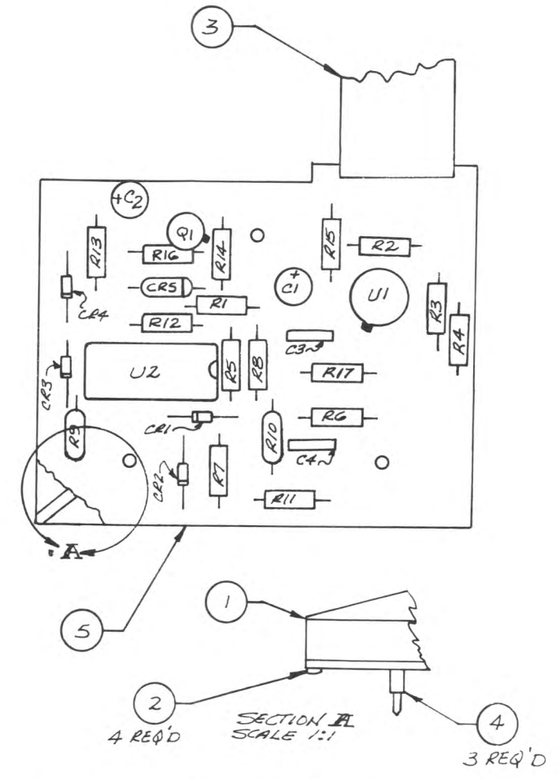
Figure 7-30. Series 6600 4.5-MHz Subcarrier Modulator Printed-Wiring Board Assembly



NOTE:

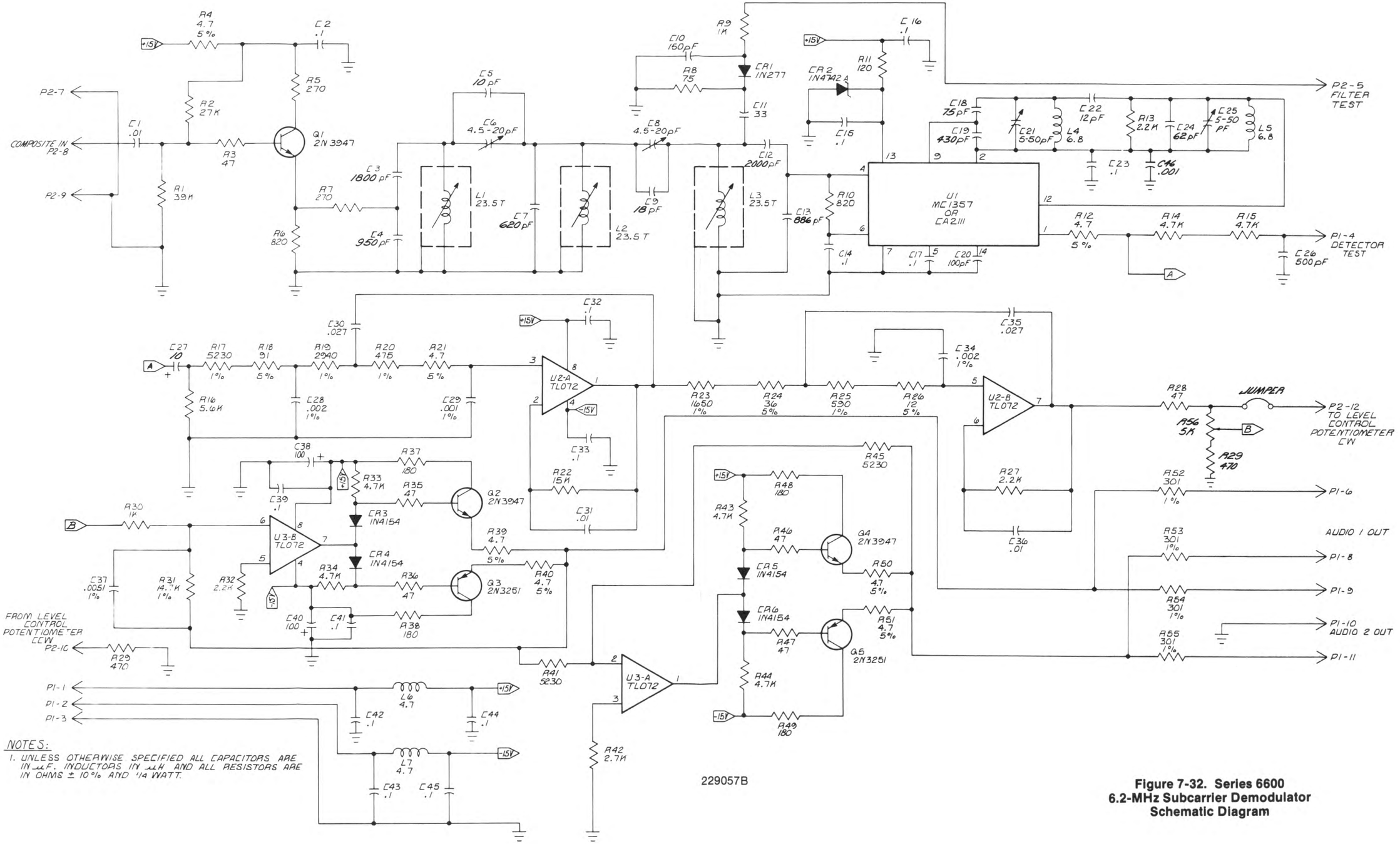
1. VOLTAGE MEASUREMENTS WERE MADE WITH NO VOLTAGE APPLIED, AND MAY VARY ±20%.

153189A



SEE SEPARATE PARTS LIST

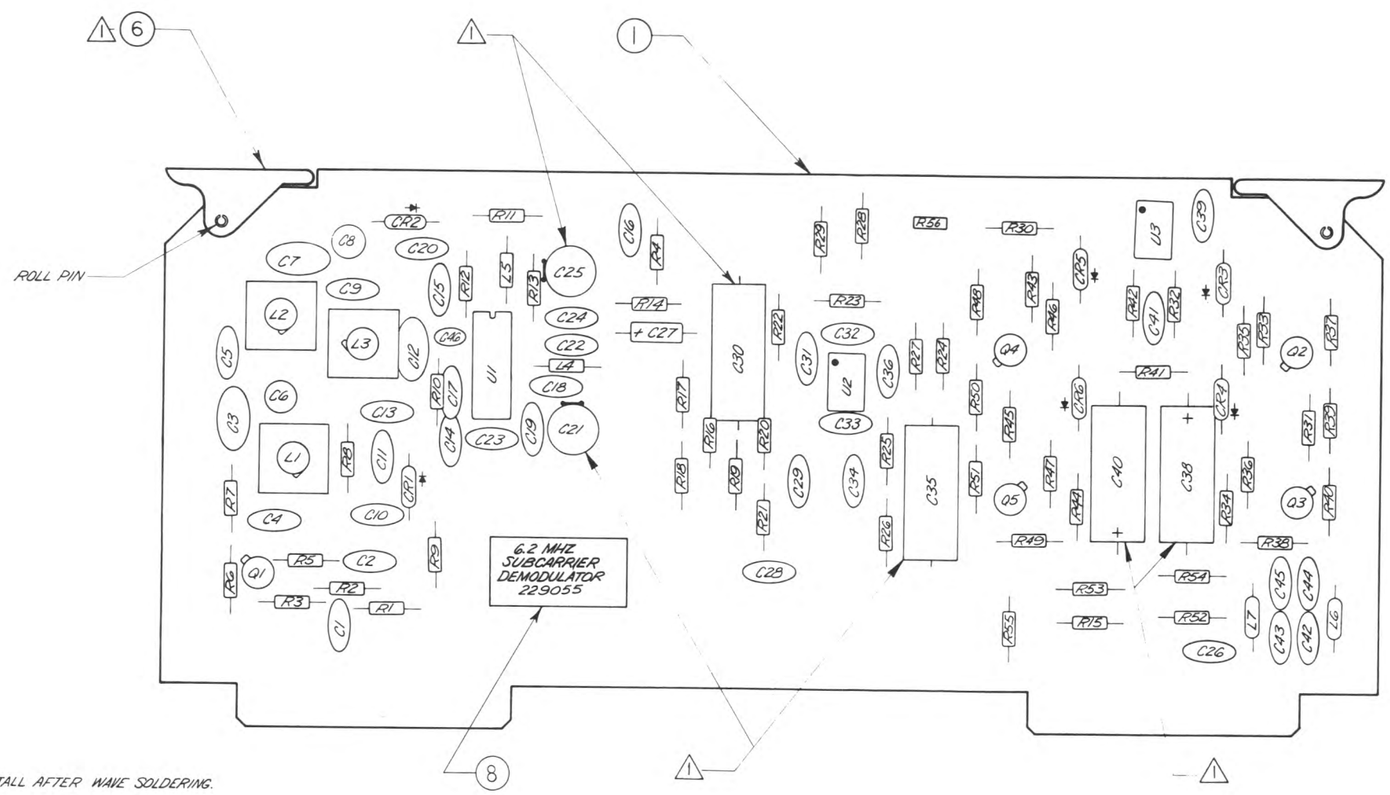
Figure 7-31. Series 6600 Audio Modulator Limiter Schematic and Printed-Wiring Board Assembly



229057B

Figure 7-32. Series 6600 6.2-MHz Subcarrier Demodulator Schematic Diagram

25R247C



229055B

SEE SEPARATE PARTS LIST

Figure 7-33. Series 6600 6.2-MHz Subcarrier Demodulator Printed-Wiring Board Assembly

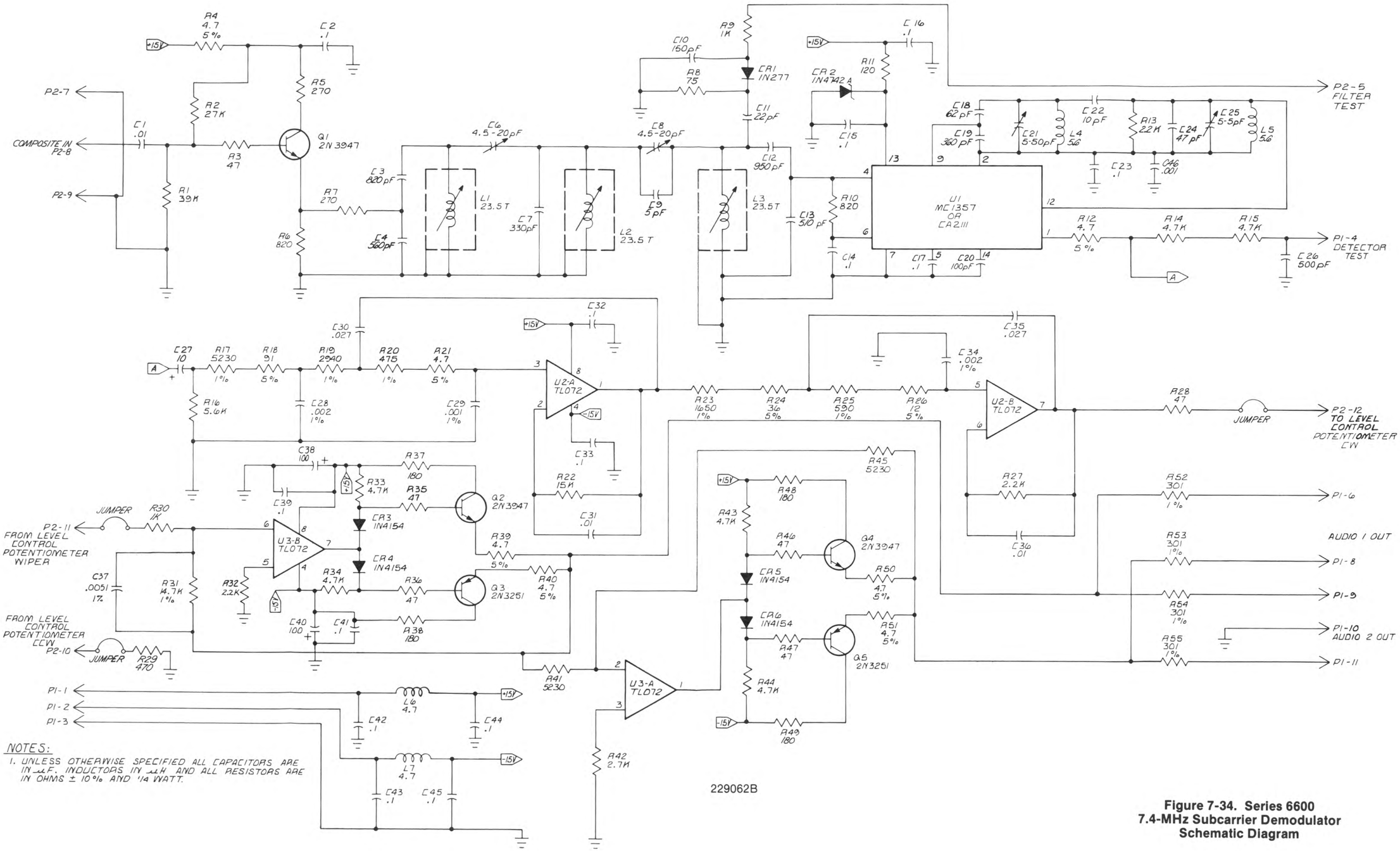
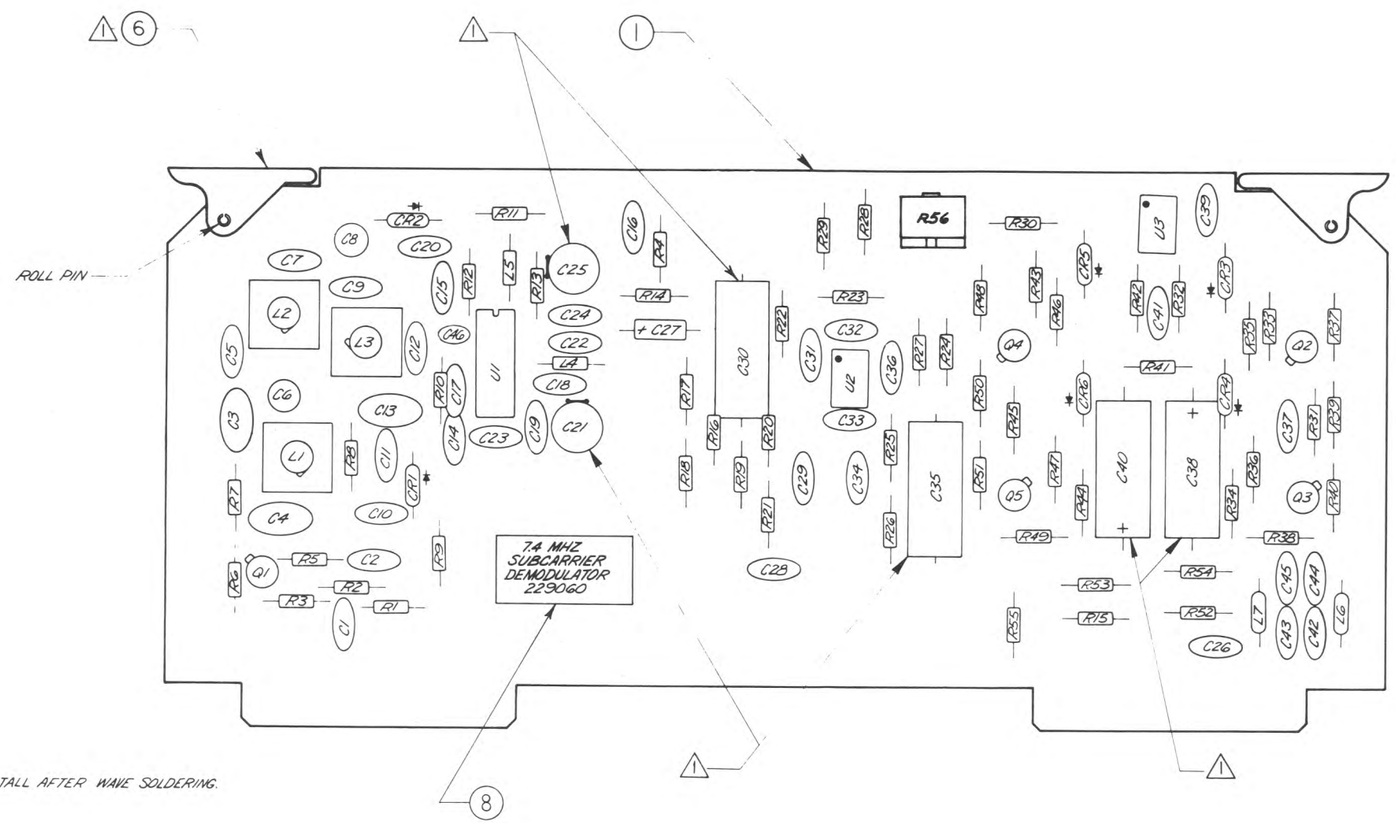


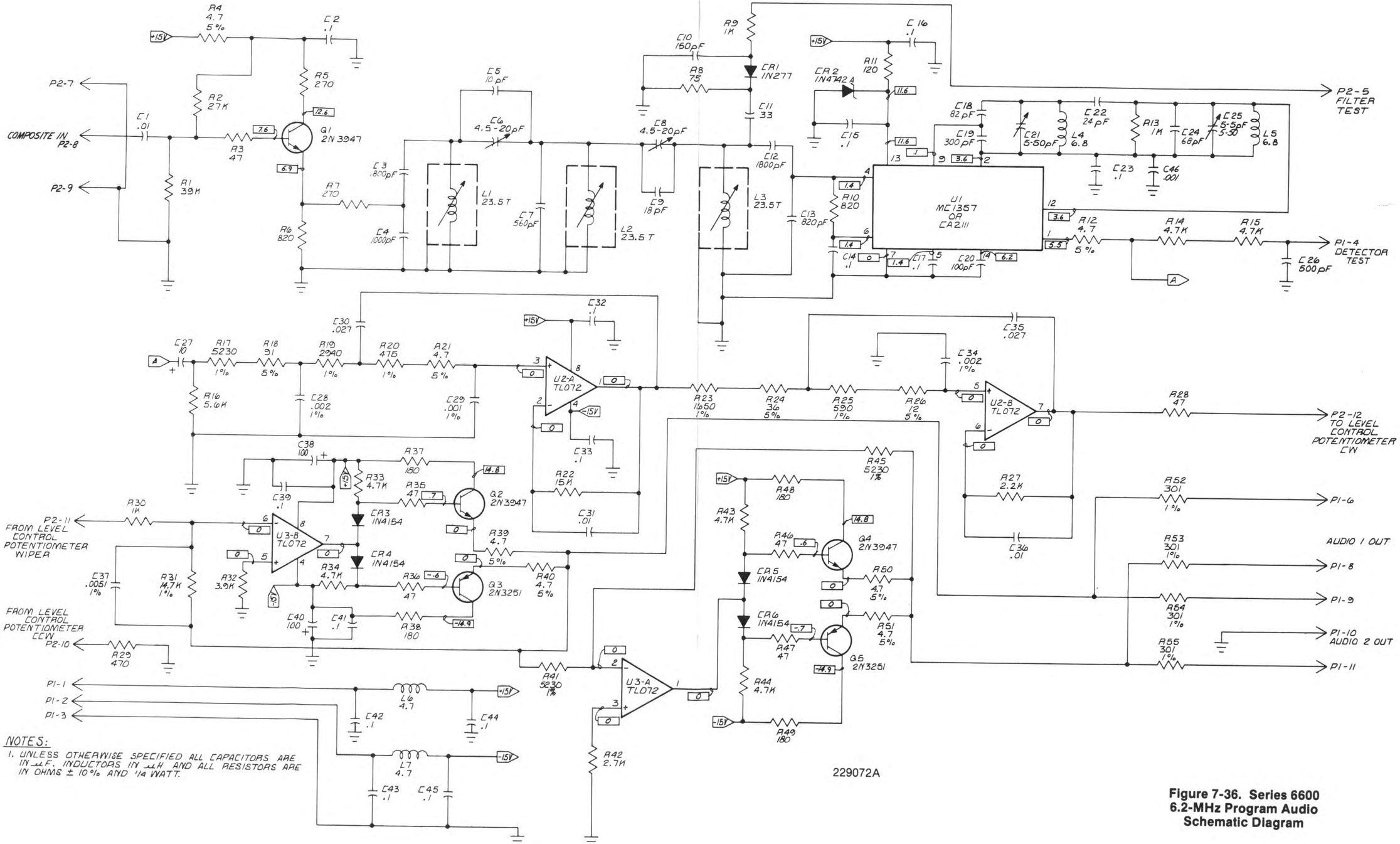
Figure 7-34. Series 6600 7.4-MHz Subcarrier Demodulator Schematic Diagram



229060C

SEE SEPARATE PARTS LIST

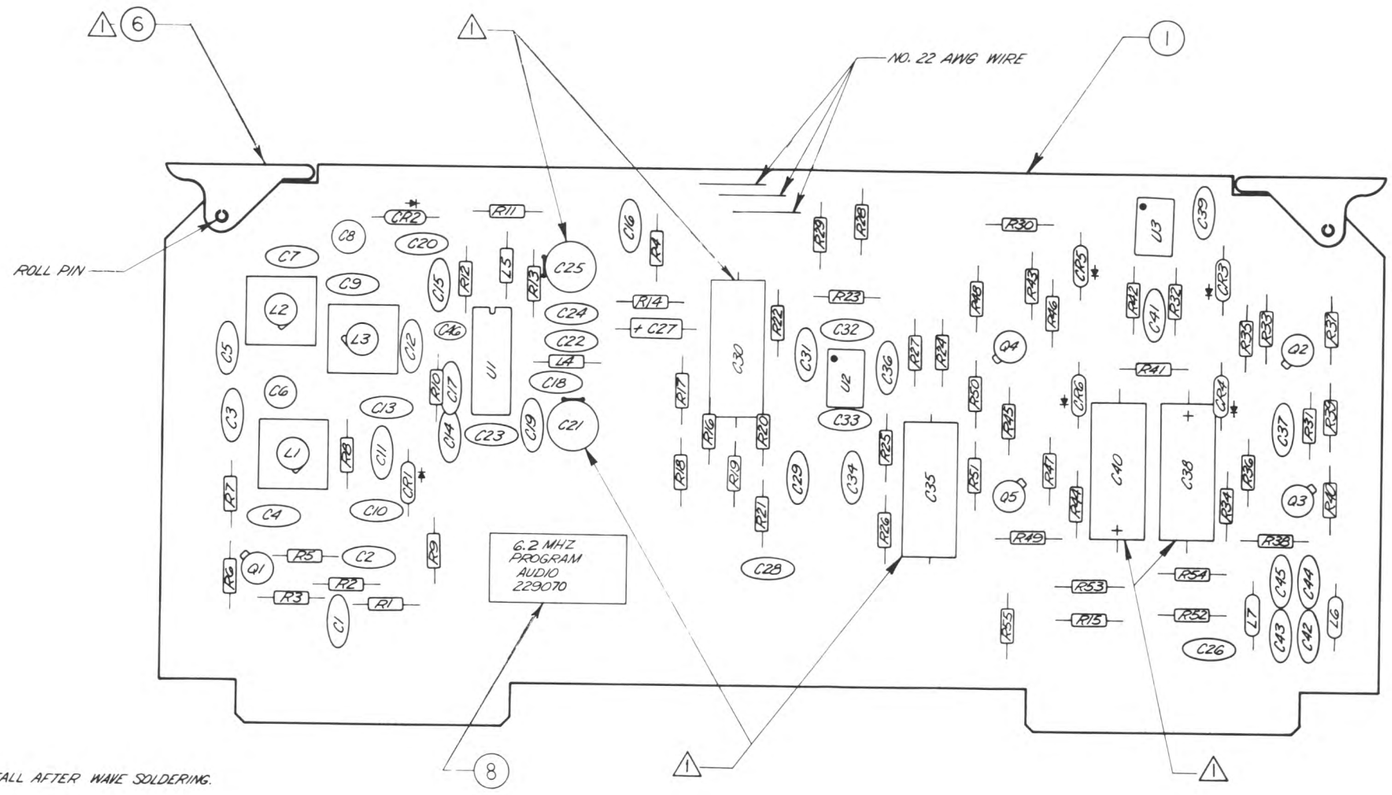
Figure 7-35. Series 6600 7.4-MHz Subcarrier Demodulator Printed-Wiring Board Assembly



229072A

Figure 7-36. Series 6600 6.2-MHz Program Audio Schematic Diagram

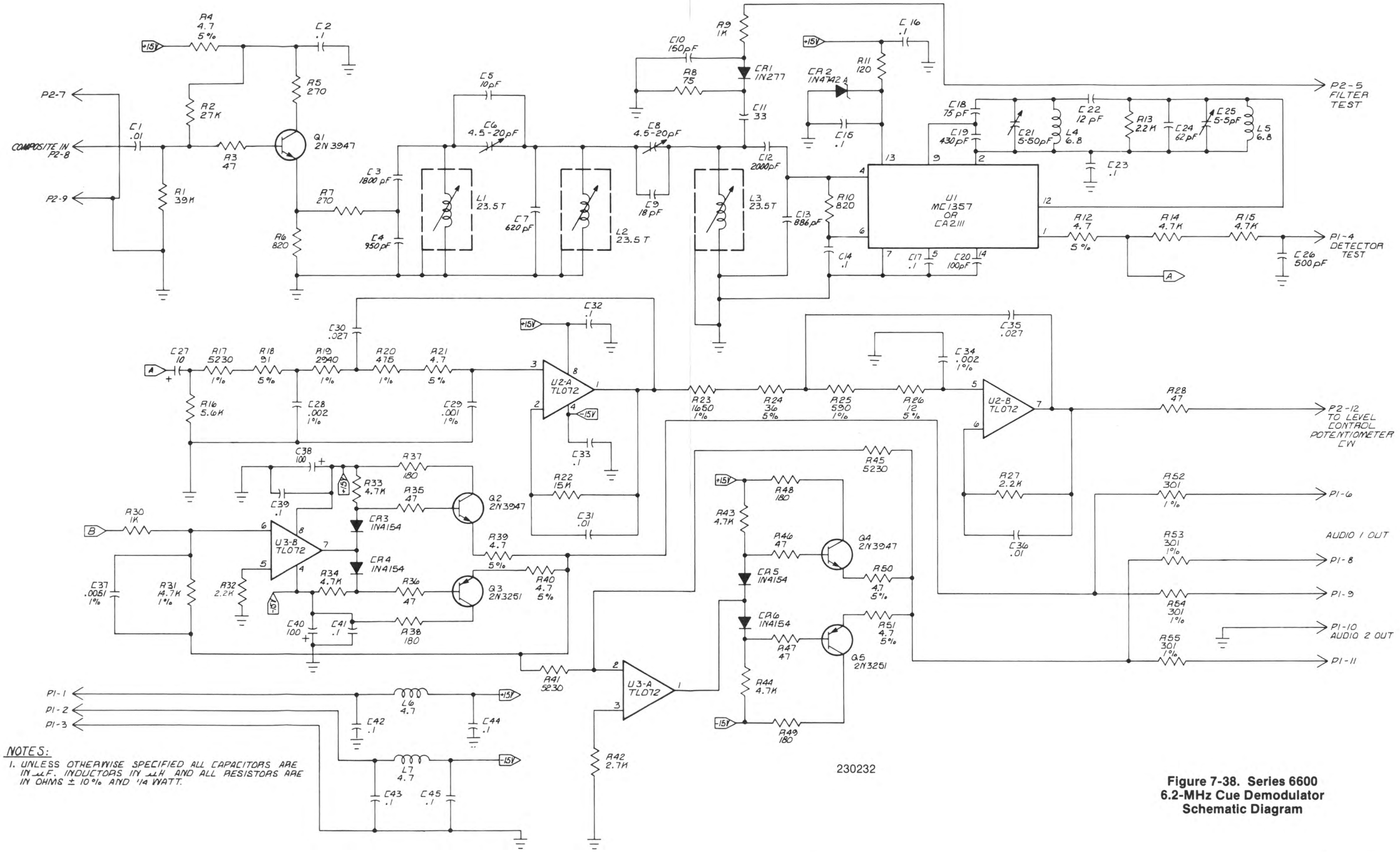
25R247C



229070A

SEE SEPARATE PARTS LIST

Figure 7-37. Series 6600 6.2-MHz Program Audio Printed-Wiring Board Assembly

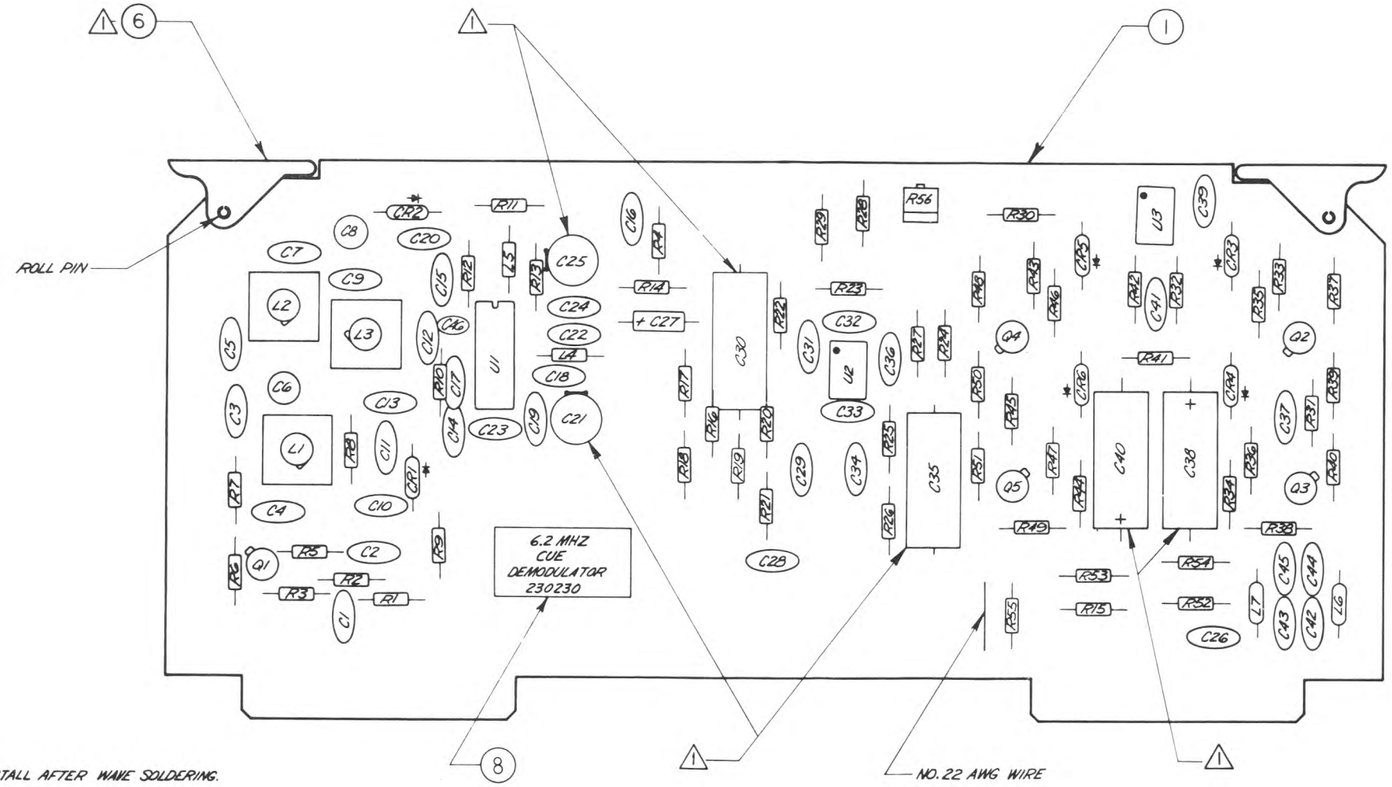


NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN μF. INDUCTORS IN μH AND ALL RESISTORS ARE IN OHMS ± 10% AND 1/4 WATT.

230232

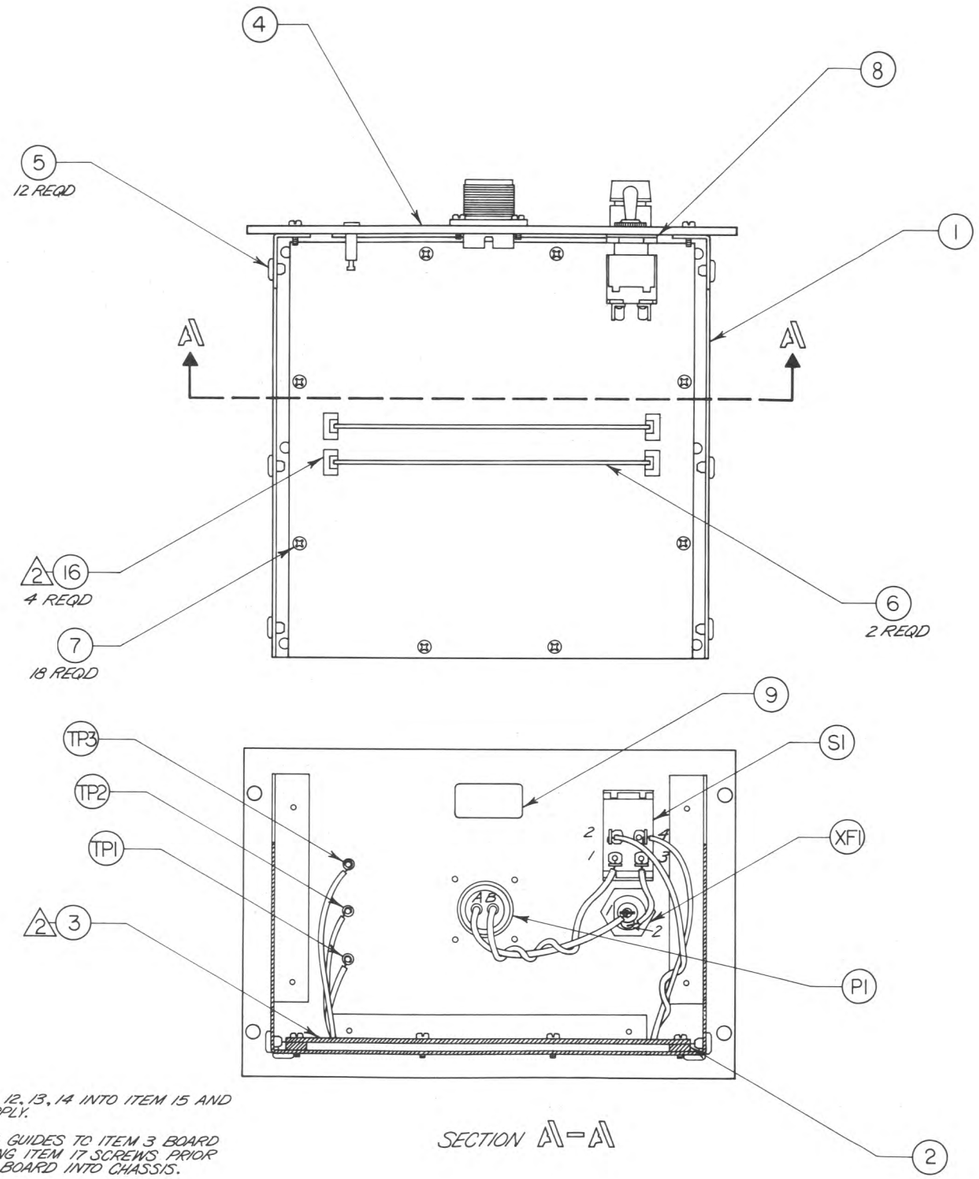
Figure 7-38. Series 6600 6.2-MHz Cue Demodulator Schematic Diagram



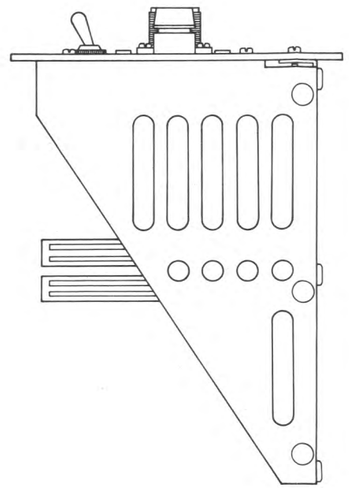
230230

SEE SEPARATE PARTS LIST

Figure 7-39. Series 6600 6.2-MHz Cue Demodulator Printed-Wiring Board Assembly



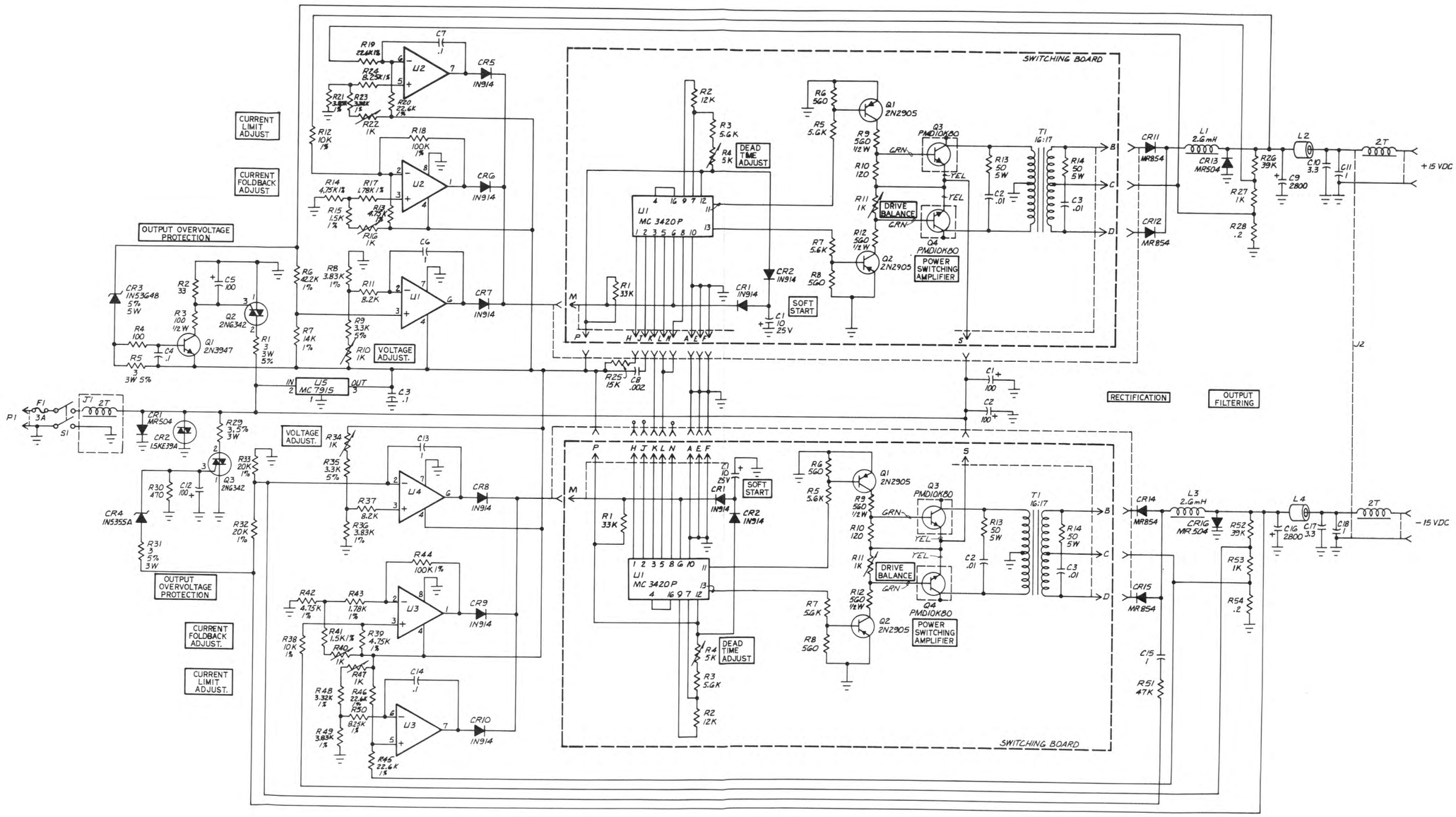
229840



WIRE NO.	MATERIAL ITEM NO.	COLOR	LENGTH INCHES	ORIGIN	DESTINATION	REMARKS
1	3	WHT/VIO	3.50 REF	PC ASSY	TP3	WIRES ARE SUPPLIED WITH ITEM 3 BOARD ASSEMBLY
2	3	BLK	2.50 REF	PC ASSY	TP2	
3	3	WHT/RED	5.25 REF	PC ASSY	TP1	
4	3	VIO	4.75 REF	PC ASSY	S1-4	
5	3	BLK	4.25 REF	PC ASSY	S1-2	
6	10	VIO	3.25	P1-A	XF1-1	SEE ROUTING IN DRAWING
7	11	BLK	4.00	P1-B	S1-1	TWIST AROUND WIRE 6 AS SHOWN
8	10	VIO	2.25	XF1-2	S1-3	SEE ROUTING IN DRAWING

SEE SEPARATE PARTS LIST

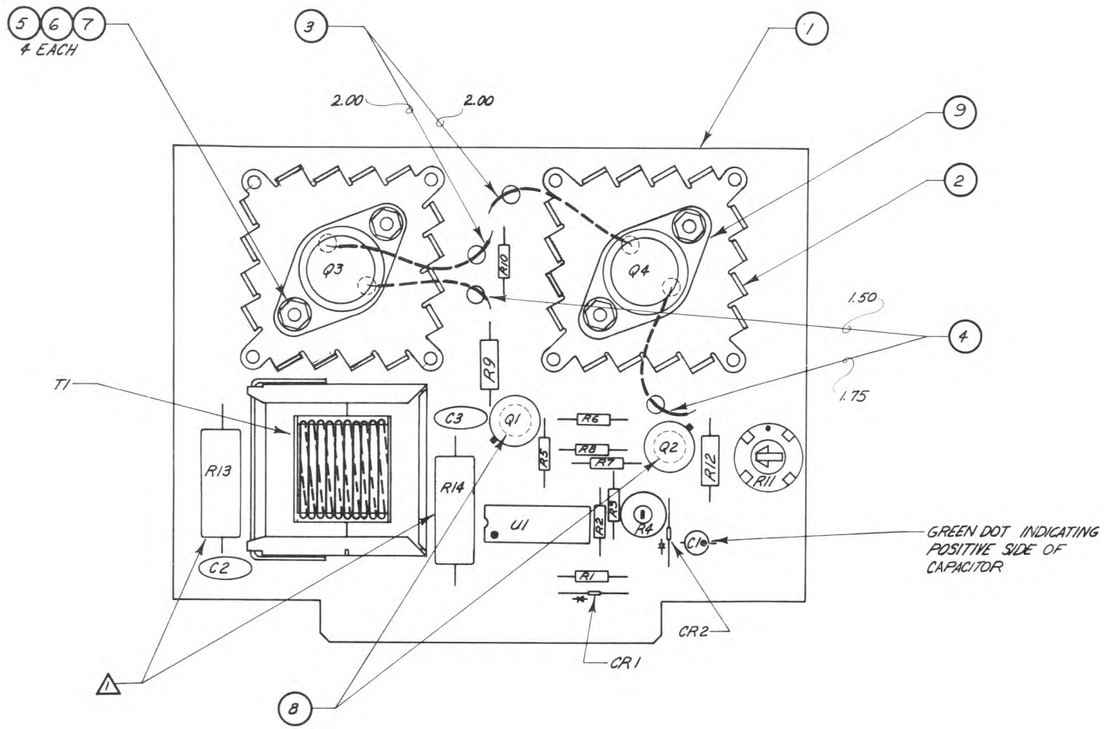
Figure 7-40. Series 6600 -24-Volt DC Power Supply Assembly



229845C

Figure 7-41. Series 6600 -24-Volt DC Power Supply Schematic Diagram

25R247C



NOTES:
1. THESE COMPONENTS DISSIPATE POWER. THEY MUST BE RAISED .062 TO .125 FROM THE PWB SURFACE.
2. ROUTE WIRES THROUGH HOLES, AND SOLDER TO TRANSISTOR PINS CLOSE TO THE BOARD. CUT AWAY EXCESS PIN.
3. PLACE A LAYER OF HEAT SINK COMPOUND (ITEM 9) BETWEEN TRANSISTOR AND HEAT SINK, (2 PLACES).
4. CAUTION MUST BE TAKEN WITH TRANSFORMER T1. IT MUST BE INSERTED AS SHOWN, TAKING CARE THAT IT SITS FLAT ON THE BOARD SO THAT THE SHORT PINS ARE SOLDERABLE.

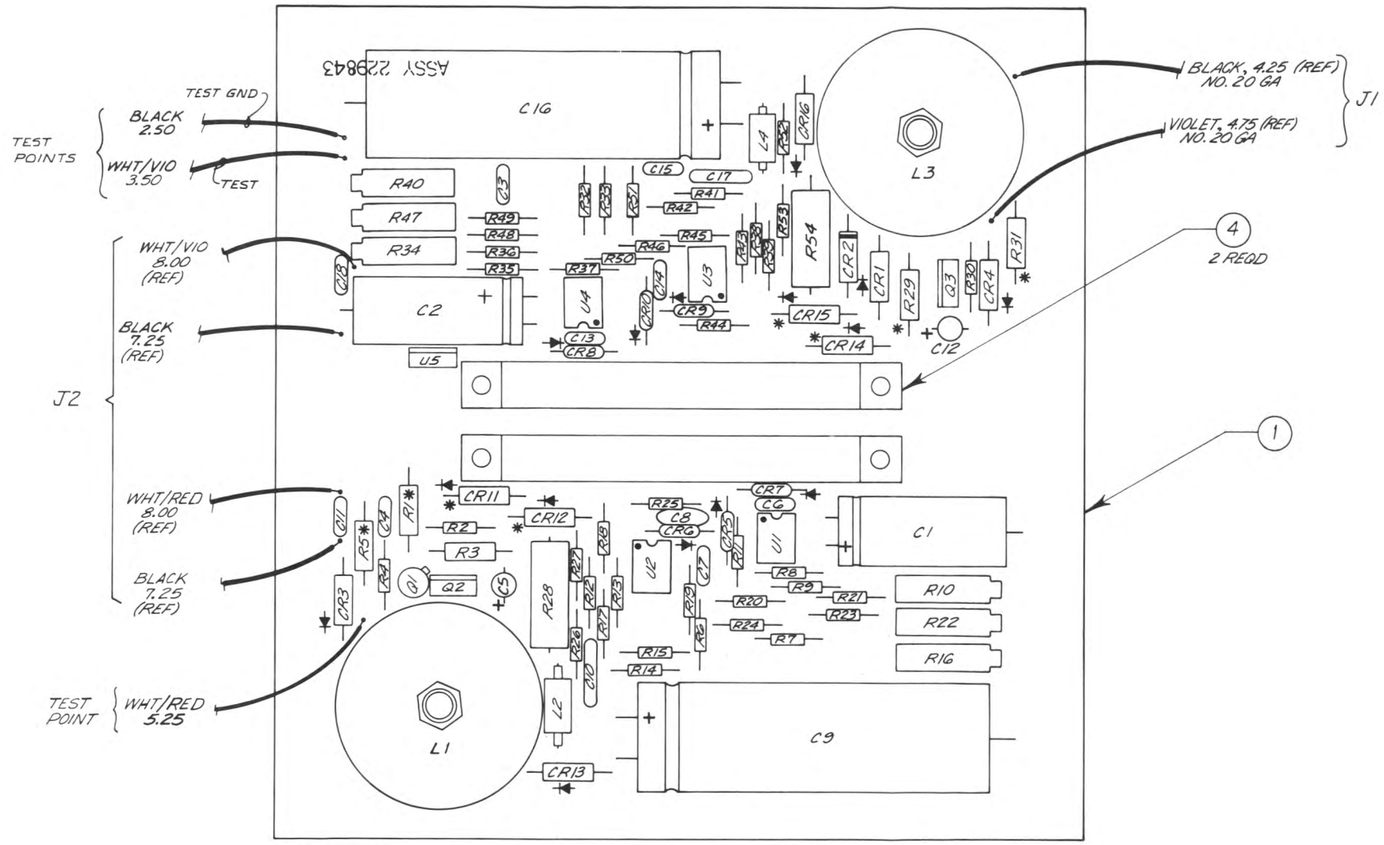
229841

SEE SEPARATE PARTS LIST FOR ADDITIONAL COMPONENTS

ITEM OR FIND NO.	QTY REQD	S-A STOCK NO.	NOMENCLATURE OR DESCRIPTION	MATL SPEC AND SIZE OR COMPONENT VALUE	IDENTIFYING OR PART NO.	CODE IDENT.
9	A/R	0082640	COMPOUND, HEAT SINK	SILICONE DOW 340		
8	2	0079335	PAD TRANS. TO5 AND TO18			
7	4	0071498	NUT	6-32 UNC-2B		
6	4	0075940	WASHER, LOCK	NO. 6, INT. TOOTH		
5	4	0072363	SCREW, PAN HEAD	6-32 X 3/8"		
4	A/R	0073370	WIRE, GREEN	20 GA. (STRANDED)		
3	A/R	0073369	WIRE, YELLOW	20 GA. (STRANDED)		
2	2	0088093	HEAT SINK FOR TO-3	1" INCH HIGH		
1	1	0229842	PWB SWITCHING BOARD	-24 VDC PWR SUPPLY		

PARTS LIST

Figure 7-42. Series 6600 -24-Volt DC Power Supply Switching Board Assembly



NOTES :

* THESE COMPONENTS DISSIPATE POWER. THEY MUST BE RAISED .062 TO .125 FROM PWBOARD SURFACE.

SEE SEPARATE PARTS LIST

229843

Figure 7-43. Series 6600 -24-Volt DC Power Supply Interconnect Board Assembly

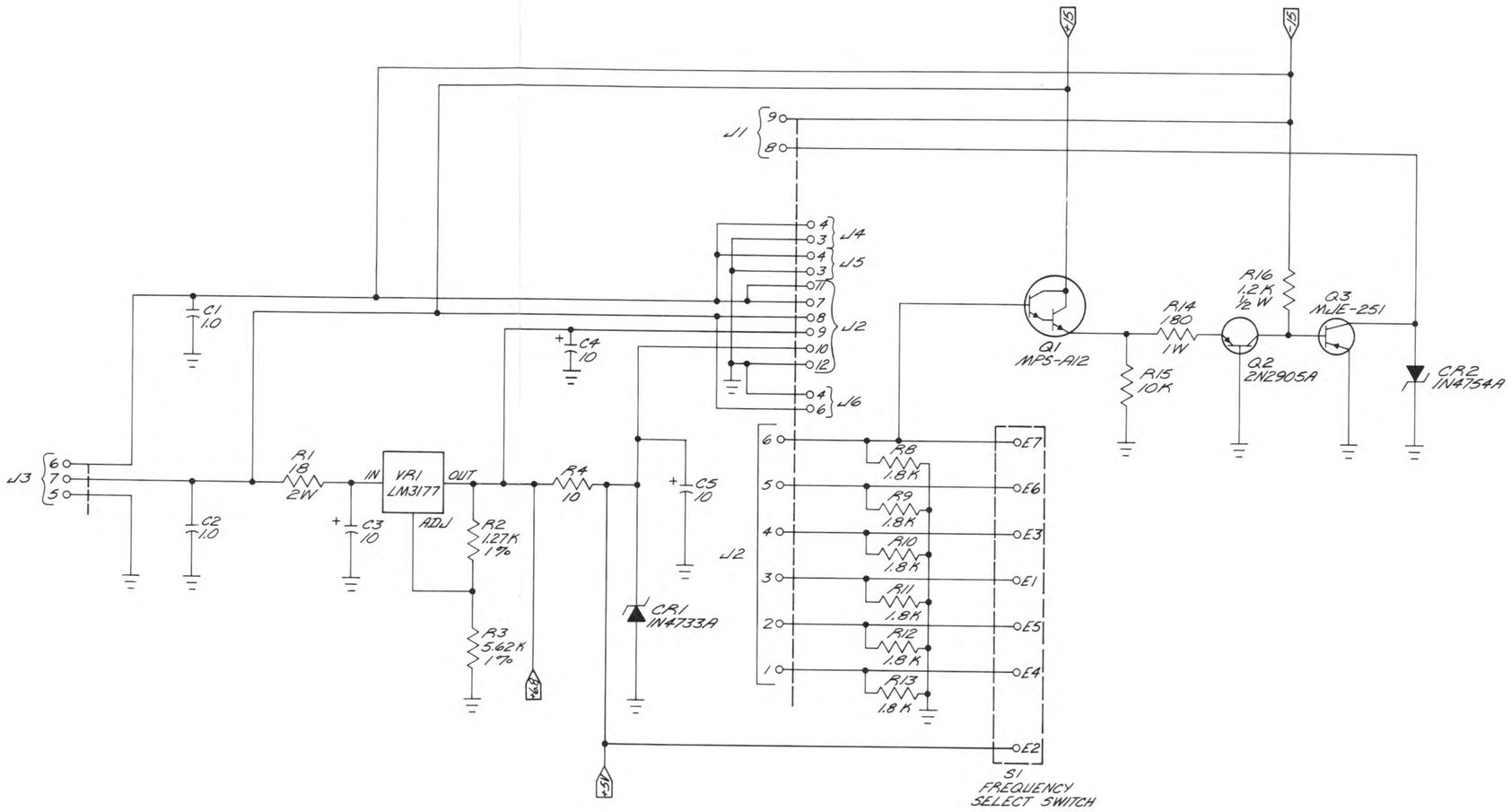
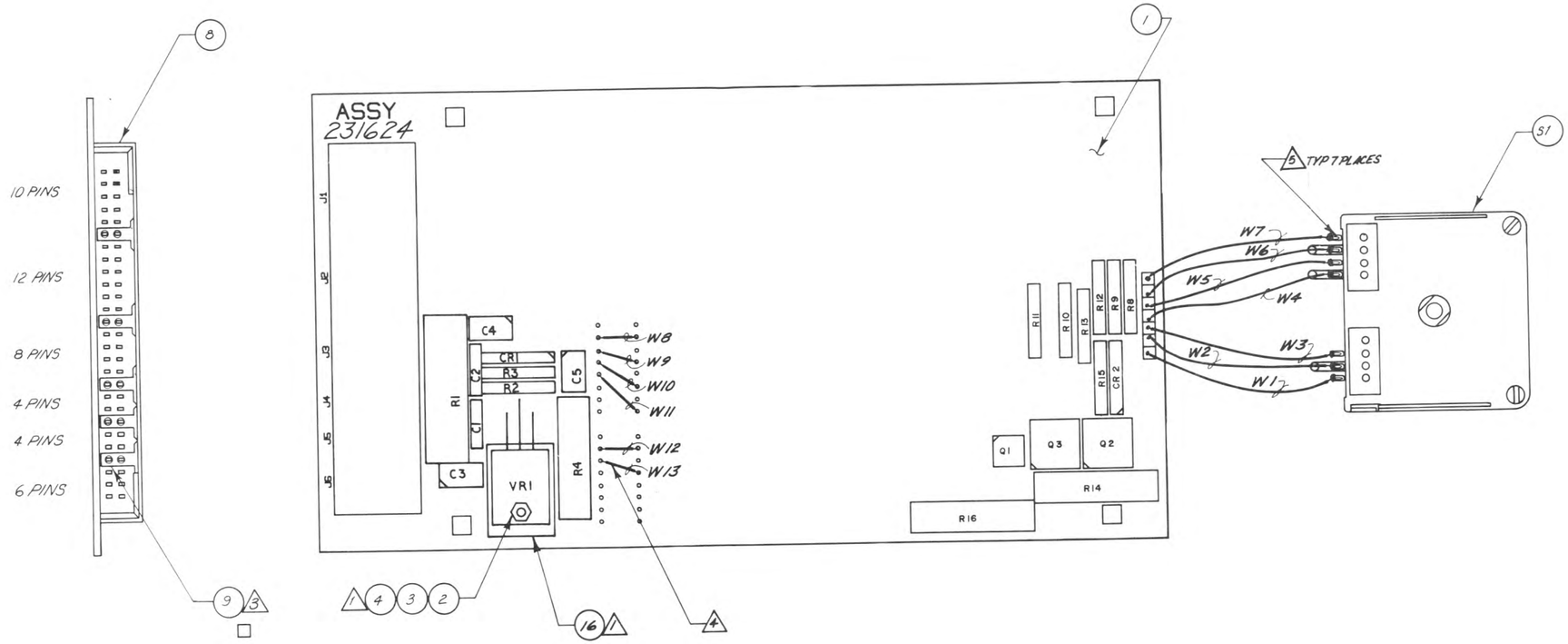


Figure 7-44. Model 6603 Interface PWB Schematic Board



NOTES:

1. INSTALL ITEMS 2,3,4 & 16 AFTER WAVE SOLDER. VR1 MUST BE SNUG AGAINST ITEM 16.
2. 2.25" OF W1 THRU W7 INSTALLED BY WAVE SOLDER. S1 MUST BE INSTALLED AS SHOWN (SHAFT DOWN) AFTER WAVE SOLDER.
3. ITEM 9 (TYP 5) INSTALLED IN EXACT POSITIONS SHOWN.
4. W8 THRU W13 ARE 1.5" IN LENGTH STRIPED .375" ON EACH END.
5. USE HOT MELT GLUE FOR STRAIN RELIEF.

231624C

SEE SEPARATE PARTS LIST

Figure 7-45. Model 6603 Interface PWB Assembly